The OIL WEEKLY

OIL and GAS ENGINEERING

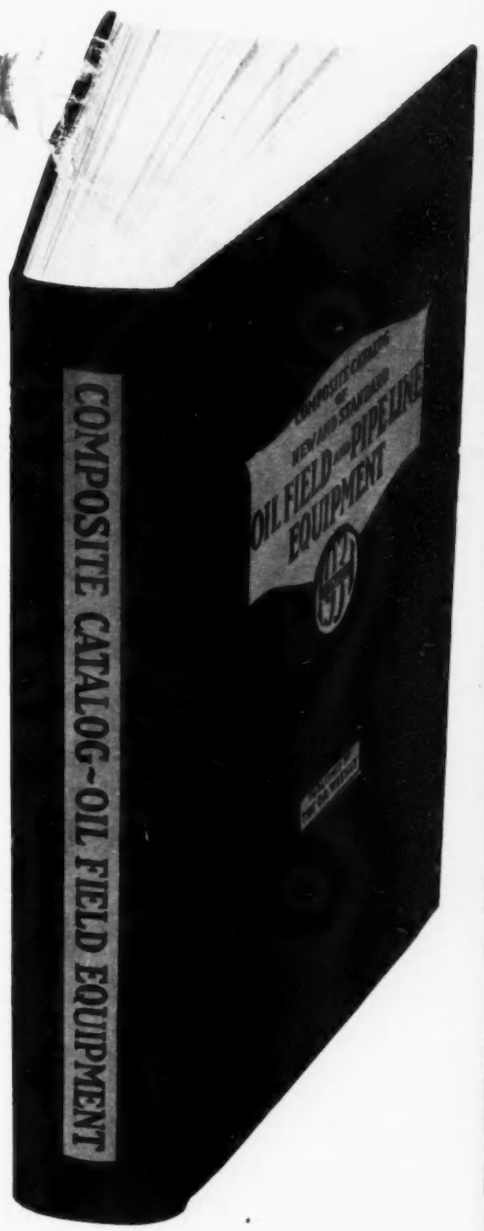
15c

NEWS — FOR OIL AND GAS PRODUCTION AND PIPE LINE DIVISIONS — STATISTICS

MAY 2, 1932

ume 65 Number 7

10,000 Oil Men Use *This!*



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IN the field of *transportation* nothing indicates progress more clearly than the time required for a message to travel from New York to Boston: In 1789, by coach, *7 days;* in 1932, by air mail, *2 hours.*

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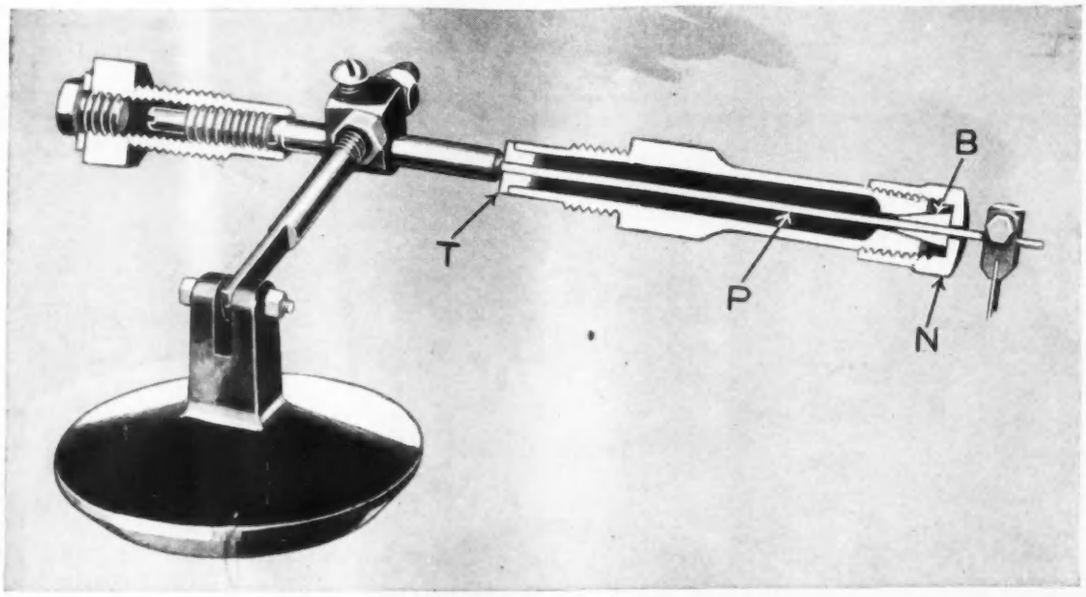

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Editor

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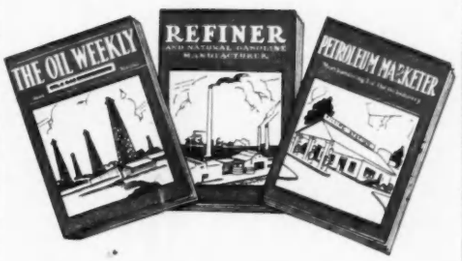

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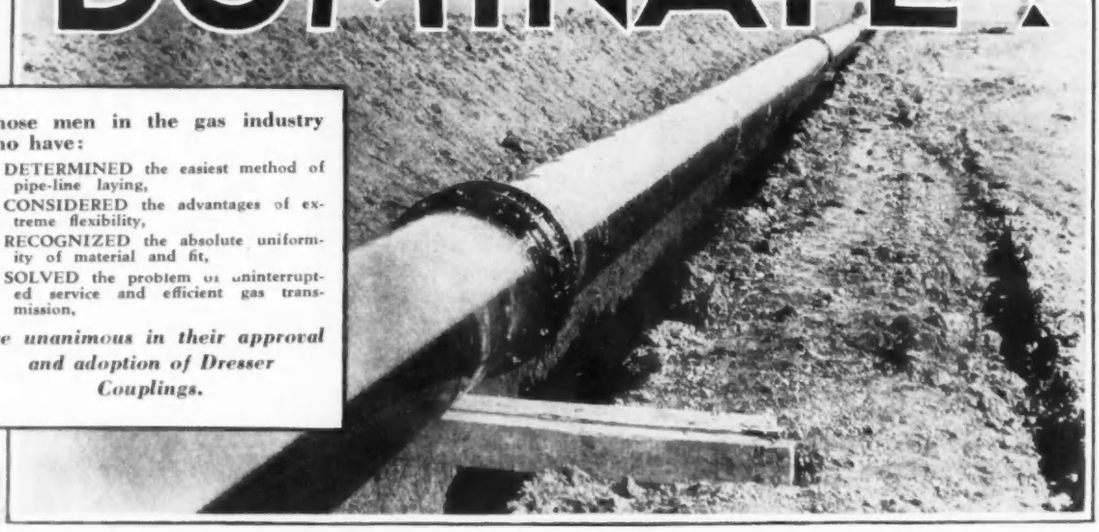

Those men in the gas industry who have:

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THE OIL WEEKLY

FOR OIL AND GAS PRODUCTION AND
PIPE LINE DIVISIONS

ENGINEERING ▪ NEWS ▪ STATISTICS

The Changing Panorama

As Others See Us—

WE have just read Samuel Blythe's indictment of the oil industry in last week's Saturday Evening Post. It is probably a pretty fair picture of what the average layman thinks about the oil industry. And except for some of his estimates on potentials—which are far-fetched—Sam Blythe has accumulated a pretty fair idea of the oil business. One almost might picture him as a stockholder in one of a dozen well known oil issues. A sort of disgruntled, disappointed and disillusioned stockholder.

As we finished the article and summed up in our minds what he had said, the outstanding fault he appears to find with the oil industry is its unwillingness to "live and let live"—the eternal fear of the independent that the majors are about to gobble him up, and the picture of the major intolerant of the independent because he is little and unwilling to take the major's opinion on various matters of policy. The picture as Blythe drew it is not an unfaithful one. With the addition of highlight which experience has given us, Blythe's picture is essentially a most faithful one.

Not long ago we attended an executive session of a rather important oil organization. Harmony appeared to be the watchword. And harmony was the watchword until one member unwisely proposed action on a question that was of a controversial nature—or rather that had two sides to it. Then the atmosphere tensed. A fight was promised—it was even threatened. As it appeared more or less from the side lines, little more than suspicion was back of the threatened scrap.

We talked later to the gentleman who threatened to start the scrap—he is a good friend of ours. We discussed with him the matter that had nearly precipitated the ruckus.

After talking to him it is our belief that the measure proposed for vote actually is not objectionable to him. He just thought it was. Actually, although, he is well known as an opponent of the idea, unit operation, he agreed that on a hypothetical case suggested he thought it was a good thing. As we saw it, this man—he is a legitimate operator, a man with all the characteristics of leadership—fought the idea only because he was suspicious that there was a nigger in the woodpile in it.

Some months ago in one state the proposal was made to the State Legislature by an association of independents that the major oil companies be required to separate their various operations to the

WHEN EAST TEXAS TURNS TO PUMPING

Above is a power installation on the H. L. Hunt Company's properties in East Texas. This is the second installation on the Hunt properties and as the field reaches the pumping stage it is expected that many similar units will be used, operating from a central power.

point where a marketing company could not engage in the refining or production business, and vice versa. The legal heads of the major companies exerted themselves, the boys well acquainted at the state capitol began their work. The idea was ruinous, they said. Maybe it was. We actually thought so, and the fact that it was proposed by oil men evidently bent on retaliation strengthened us in that opinion. But within a few months time we heard a high executive of one of the large companies involved express the idea that it might have been a good thing for all concerned, after all!

Dog eat dog! That was the picture Blythe painted.

We have heard it said that the oil industry lacks leaders. We have heard many independents say that. We have heard some majors say it too. Maybe we have said it ourselves. But as we ruminate on the thought, it occurs to us that those who complain of lack of leadership are complaining because the particular brand of leadership *they* want isn't forthcoming, and they will not waver one jot or tittle from their own ideas or positions.

After all there is little unanimity in democratic government—or for that matter in any government. Government and business are alike in that the individuals composing them must give and take. Majority rule has made the United States. There has been too much disposition to "take" and too little to "give" in the oil industry.

Are we right?

The Oil Man's Calendar

MAY

2- 5 *Southern Gas Association, New Orleans, Louisiana.*

4- 6 *National Foreign Trade Council, Honolulu, Hawaii.*

9 *Independent Petroleum Retailers of Ohio, Cleveland, Ohio.*

9-11 *Natural Gas Department, American Gas Association, Tulsa, Oklahoma.*

13-14 *Eastern District A. P. I. Division of Production, Wellsboro, Pennsylvania.*

15-17 *National Oil Scouts Association of America, Houston, Texas.*

16-20 *U. S. Chamber of Commerce (Special Oil Group Session), San Francisco, California.*

17-19 *Natural Gasoline Association of America, Tulsa, Oklahoma.*

20-21 *Virginia Oil Men's Association, Staunton, Virginia.*

JUNE

1- 3 *American Petroleum Institute Mid-Year Divisional Meetings, Tulsa, Oklahoma.*

6- 9 *National Association of Purchasing Agents, Detroit, Michigan.*

20-24 *American Society for Testing Materials, Atlantic City, New Jersey.*

AUG.

23-26 *Pacific Coast Gas Association, Spokane, Washington.*

SEPT.

14-16 *National Petroleum Association, Atlantic City, New Jersey.*

15-17 *American Trade Association Executives, Atlantic City, New Jersey.*

OCT.

10-14 *American Gas Association, Atlantic City, New Jersey.*

NOV.

15-17 *American Petroleum Institute (Annual). Houston, Texas.*

East Texas Economies

Drilling a straight hole and still making both ends meet involves many economies in East Texas. While there is more drilling going on there than in any other area at this time, there are plenty of workers to do it, with result that field men have their wage scale reduced to levels heretofore not considered in the oil business, and many comforts heretofore provided as a matter of course have been discontinued. Competition among drilling contractors has reduced the cost of completing wells to such figures that operating companies are finding it much cheaper to contract than to have the work done by their own crews. To still further reduce costs, used, or if new, lighter equipment is being employed. Page 51.

California Slowing Down

Midway-Sunset has produced 715 million barrels of oil; given more time it is expected to reach a billion. This greatest of California fields, like most of the other large producers, has more past than future, so much so that only with an estimated ultimate at Kettleman Hills of over one billion barrels can it be estimated that approximately half of the state's known reserves have been recovered. Pioneer oil state as it is, approximately 60 per cent of what California has produced has been in the last ten years. Except for three well controlled fields, California's immediate prospect for heavy increases in production are nullified by the fact that the known reserves are in fields more than half depleted and facing a future in which recovery will not be rapid. Page 13.

How Big?

There's the old joke about the well being as deep as a tree. Add this: the volume of oil to be recovered from East Texas is as big as a lake. The lake in question would be about 25 miles long, four miles wide and four feet deep. That is not from exact calculation, but those demensions will approximate the two billion barrels that current estimates place upon the ultimate recovery—and not counting the salt water that is expected to accompany the oil in the latter stages. Extent of the area, sand thickness and other factors are now well enough known that the volume can be estimated with some degree of accuracy. Even at the rate wells are being drilled there, it should be several years before any estimator can say "I told you so," and by that time probably there will be other things to consider. Page 15.

Industry Sees Biggest Transport Job *as Work Starts on* Iraq Line

Pipe for Trunk Lines to weigh 116,840 long tons . . .

Steel tanks estimated at 100 tons . . .

Thousands of items of auxiliary equipment . . .

All must be moved long distances over poor facilities and sometimes hostile country.

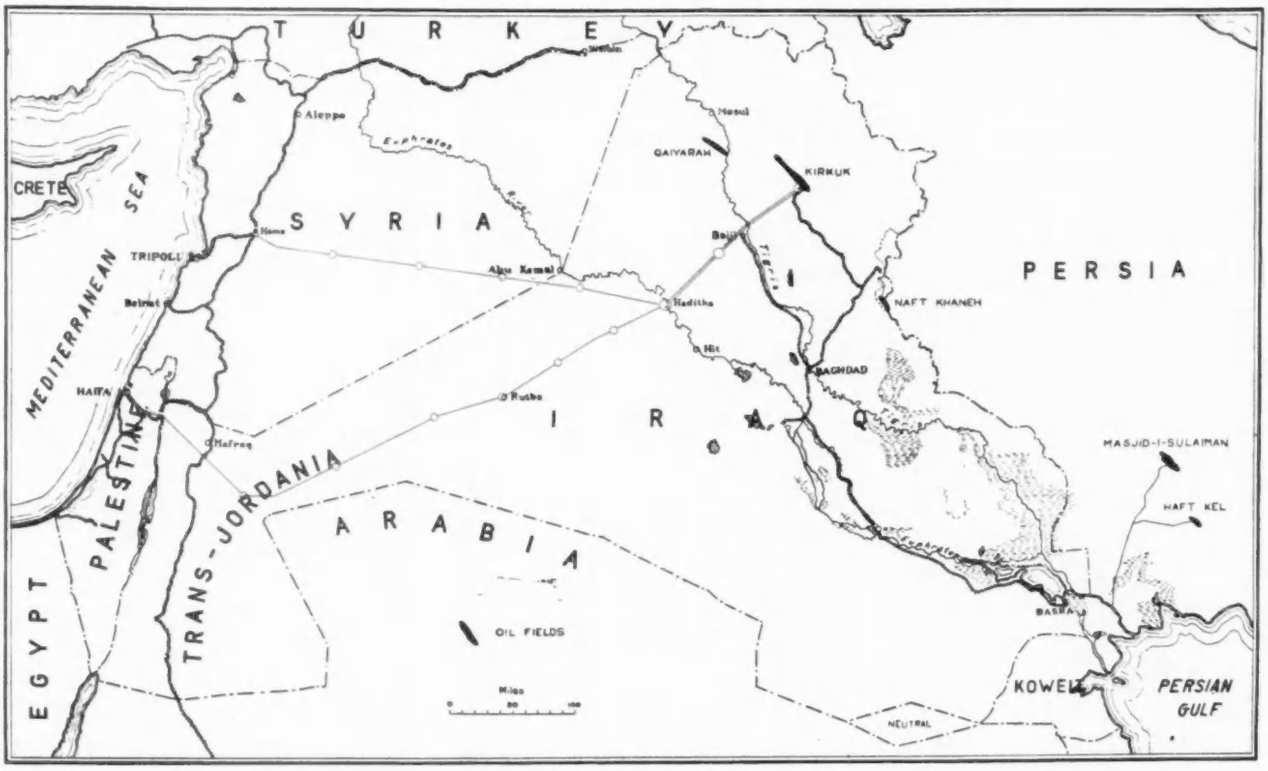
Shade temperatures in Iraq sometimes range 6° to 8° above the maximum figures shown here.

OFFICIALS of Iraq Petroleum Company, Ltd., are making plans and schedules for what will rank as the greatest transport job ever undertaken in the history of foreign oil operations, a job which also might be described as the greatest in the history of the oil industry. Longer lines have been built in the United States, but none of them involved the handling of such tonnage on the part of the construction organization.

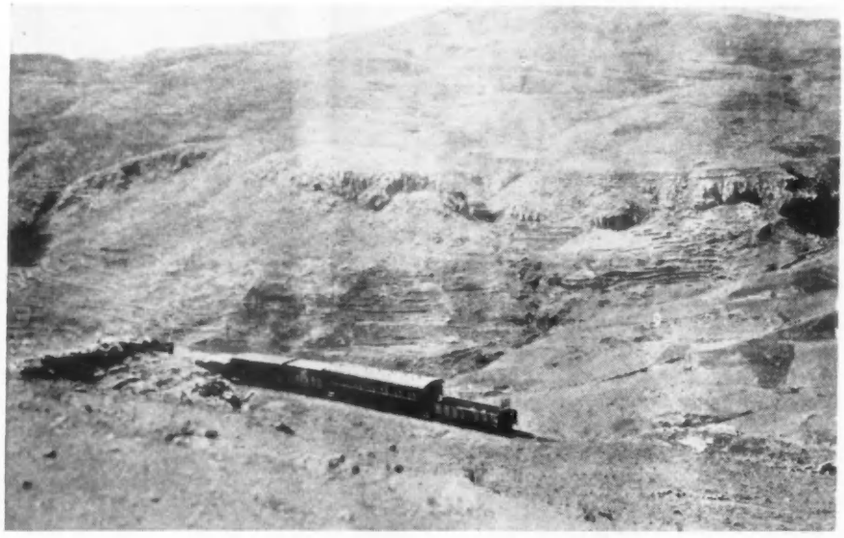
Pipe alone for the trunk lines which will be constructed by Iraq Petroleum Company, Ltd., for the account of its subsidiary, Mediterranean Pipelines, Ltd., will weigh approximately 116,840 long tons; and it is possible that additional pipe required for water lines and auxiliary services and connections may range between 5000 and 15,000 tons in weight. The engines and pumps have not yet been ordered, but it is possible to state that equipment of a certain type which could be used in this service would weigh approximately 1100 tons. Sixty-three sectional steel buildings were purchased in Great Britain; and, while it is not possible to give their exact weight, it is estimated as totalling approximately 1800 tons.

The total tonnage of steel tanks is not known, but a horse-back estimate of 100 tons will serve the present purpose. In addition to these major items, the transport problem will embrace 547 tons of copper wire for 4080 miles of telegraph and telephone lines, to say nothing of heavy tonnage of tubular steel poles, cast iron bases, wooden cross-arms, insulators, switch-board equipment, and telephone and telegraph instruments.

Valves, welding equipment, station auxiliaries, ditchers, backfillers, cranes, bull-dozers, tongs, small tools, furni-



A Wide Expanse of the Territory to be Traversed by the Iraq Pipe Line is Far Removed from Railway Lines, and Desert Country Makes the Transport Problem for Material and Supplies a Difficult One.



A Typical Scene on the Iraq Railway Line Which Serves the Iraq Oil Fields

ture, household and office equipment, kitchen equipment, cutlery, linen, food supplies, medical equipment and supplies, and all of the thousands of items required for the maintenance of life in hostile desert country will also add materially to the bulk to be transported inland from Tripoli, Haifa, and Basra, sea-ports to which shipments will be consigned.

Railroad Transport

Railroad facilities are available for shipments from Tripoli to Homs, in Syria; from Haifa, in Palestine, to Mafraq, in Transjordania; and from Basra, near the head of the Persian Gulf, to Bagdad and thence along the Iraq Railway to Kirkuk and along the Baghdad-to-Berlin route to Baiji, a station near the point at which the line will cross the Tigris River. Shipments consigned to both of these eastern points will have to be transshipped and ferried across the Tigris at Bagdad, the capitol of King Feisal's domain.

Construction will be started simultaneously by six different gangs at Tripoli, Homs, Haifa, Mafraq, Kirkuk, and Baiji; and will be pushed inland from all three terminals as rapidly as material is delivered. Contracts call for deliveries of 12¾-inch pipe at the rate of 16,000 tons (155 miles) per month beginning June 15. All of the temporary steel buildings were due to have been shipped from British ports by April 15.

It is fortunate that the summer season will end at about the time when construction is scheduled to be commenced; and that a major part of the preliminary work will be done during the winter months, when the temperature and climate are not unlike those of southern California. During the summer months, however, shade temperature ranging up to 128° F. have been experienced.

Road conditions will not be difficult, except during the rainy season, as the desert trails are dry and hard and generally smooth. Of the total of 1020 miles of right-of-way, all but about 150 miles lies west of the Euphrates; and pipe and materials for the western branches will not, of necessity, have to be ferried across either of the two great rivers of the kingdom. It is assumed that pipe for the eastern section between Kirkuk and the Tigris will be ferried across the river at Bagdad and shipped thence by rail to Kirkuk. Material for the inter-river section between Baiji, on the Tigris, and Haditha, on the Euphrates, also may be transshipped at Bagdad and moved thence by rail to Baiji.

The design of the line is practically settled, although not beyond possibility of change. Actually, there will be two separate and independent systems, as the main-line section between Kirkuk and Haditha will be doubled, with duplicate facilities, each capable of being operated independently of the other.

The two systems will fork at Haditha, whence the northern section will traverse French mandated territory to Tripoli, on the Mediterranean, and the southern branch will traverse areas under British mandate or influence to Haifa, a Mediterranean port in Palestine. The three pump stations near Kirkuk, Baija, and Haditha will be double stations, with every facility installed in duplicate.

The length of the Kirkuk-Tripoli line will approximate 540 miles, while the over-all length of the Kirkuk-Haifa system will total about 630 miles.

Both systems will require around 1200 miles of pipe, of which about two thirds will be of 12¾ inches diameter and one third will be of 10¾ inches.

There will be three double stations on the parallel lines between Kirkuk and Haditha, four single stations on the Tripoli leg, and five or six on the Haifa branch, with sea-loading terminals at Tripoli and Haifa. Both of the harbors chosen for the Mediterranean terminals afford protected waters for tanker loading, with deep water available at points fairly close inshore.

Pipe From Europe

The 12¾-inch pipe, amounting to approximately 84,000 tons, has already been ordered from European mills. About 42,000 tons, or 50 per cent, was allotted to French mills; approximately 29,400 tons, or 35 per cent, to British mills; and about 12,600 tons, or 15 per cent to German tube manufacturers. It is noted that contracts covering 85 per cent of this tonnage were awarded to manufacturers who have had little experience in rolling pipe of such large diameter. Casual observers have expected that purchases for this great project might be divided on some sort of national basis, it having been suggested that such a division might be made to correspond roughly to the division of ownership in Iraq Petroleum Company, which is approximately one half British, one fourth French, and one fourth American. It is understood,

Aerial View of the Tigris River Which Will Be Crossed by the Iraq Pipe Line

Palkanah Structure, South of the Baba Gurgur Structure, Iraq, illustrating the terrain of the area.

however, that the awards were made on a price basis; and a report to the effect that United States mills were under-bid approximately to the same extent as that represented by the recent decline in sterling exchange is not without interest. However, about 200 miles of the 10¾-inch pipe has been purchased in the United States.

Competition in bidding for contracts to supply materials and equipment for the Iraq lines is keener than ever before in history; and never before has it been possible to construct such a line so cheaply as now. Manufacturers of all industrial nations are bidding, some on the basis of depreciated currencies, at a time when plant capacity is idle all over Europe and the United States.

Trucks and Tractors

Competition for the sale of trucks and tractors will illustrate this point. Initial tests are being made in preliminary transport work of seven different makes of trucks, including two of American, two of British, and one of French manufacture, and twice as many manufacturers may be represented in the final bidding. It is possible that a number of tractors also will be required.

The matter of trucks and tractors is now under consideration; and all of the engines, pumps, valves, ditchers, backfillers, cranes, bulldozers, wrapping and coating machines, welding equipment, and other auxiliaries remain to be purchased; and American manufacturers are hopeful that their specialized experience will be considered in such connection.

The valves will represent a considerable volume of business in themselves, as the dual system will have 15 different pumping stations, at intervals averaging approximately 60 miles. It would seem logical to expect that equipment and talent for welding these lines will be purchased and recruited in the United States, as Europeans are virtually without experience in the manufacture and use of equipment for pipe-line welding.

The keenest competition in bidding may occur in connection with the pumps and engines. The preliminary design calls for 51 to 54 units of 500-horsepower crude oil-burning Diesel engines with reciprocating pumps having a capacity of 21,250 barrels per day at 800 pounds operating pressure of oil having a viscosity of 61 seconds, Saybolt Universal, at 60° F.

The matter of water supply is one of the most important considerations in trans-desert construction. As the stations are now planned, all four of those on the northern leg will be without local supplies of water; and their requirements may have to be supplied from the Euphrates River and pumped over a total distance of about 200 miles. Altogether, nine stations are without water in sufficient quantity, as now located. Three water drilling units have been ordered in contemplation of a campaign of drilling in search of water near each of the intermediate stations; and the matter of dams for the retention of winter rainfall may also be considered. Thirty-one miles of water line is already under construction from the Tigris to the site for Baiji Station. Unless water can be supplied from wells and dams near the intermediate stations, it is possible that a total of 350 miles of water lines may have to be laid.

It has been rumored in connection with the Iraq project that aeroplanes may be employed by line-walkers, or line-fliers, and that aerial transport may be used extensively in connection with construction. It appears that no definite decision has been reached as yet; but it is said that tentative plans include one small cabin plane for official use and one large transport ship which could be used for the movement of pipe-line crews and for the delivery of valves, tools, parts, and small units of equipment. As 10¾-inch pipe may be delivered in advance of the 12¾-inch, it may be necessary to do a lot of shifting of personnel along the different sections of the rights-of-way.

Full details are not available, but it is known that tankage for the two systems will include fourteen 30,000-barrel tanks equipped with floating roofs. It is said that the station at Haditha will include five 93,000-barrel tanks. The total of field storage which will be provided at Kirkuk is not known; but it probably will exceed 500,000 barrels, with greater capacities at Tripoli and Haifa, together. The capacity of both pipe lines will approximately 84,000 barrels per day.

To Re-Check Hobbs *Potentials But Operators* Pass Up Unit Plan Action

DALLAS, TEXAS, APRIL 28.

A RE-CHECK on the potential flow of all wells in the Hobbs field, New Mexico, was agreed upon at a meeting of operators held here April 27, but no definite action was taken in regard to the adoption of a unit plan of developing and operating all properties. Operators representing more than 80 per cent of the productive area have tentatively agreed upon the pooling of leases under a unit plan as a means of combatting a growing water menace on the west flank of the structure, and also to check gas waste unavoidably taking place on structurally high leases. E. G. Allen, Shell Petroleum Corporation, Dallas, is chairman of the proration advisory committee, and presided at the meeting.

Gauging of all wells will be started immediately by Umpire C. G. Staley, who was present at the Dallas meeting. A decline in the total estimated flow of the field is expected because of a number of heretofore big wells on the west side having been hit by bottom hole water, while natural oil and gas depletion will be reflected by some properties. The gauges will be taken with wells flowing open through three-inch tubing for a brief period, and the tubing-casing ratio curve plan applied to arrive at the estimated daily open flow rate.

Unit Under Consideration

Unitization of the Hobbs field has been under contemplation by operators for more than six months, with a majority favoring the pooling of leases. However, some of the companies that have leases advantageously situated in regard to immunity from encroaching sulphur water and presence of a liberal share of the heavy gas producing zone above the oil pay, have sought more time to investigate the merits of the plans as outlined by the committee of engineers. The unit idea began taking form during the course of regular field meetings of petroleum engineers, working with the proration authorities last summer and fall. Harvey Hardison, engineer for The California Company, is chairman of this committee. The first general meeting was held in Dallas December 11, 1931, to present untization in a concrete form.

A vote of operators on unitization was taken at a proration meeting held in Santa Fe, New Mexico, January 8, 1932, but action was deferred to remove some of the objections raised by the minority. A committee of operators, headed by L. E. Barrows, manager Fort Worth division office of The Texas Company, was appointed at Santa Fe to work with the committee of engineers in perfecting a plan that would meet with popular reception of all operators.

Hobbs field has an estimated daily potential of 1,158,934 barrels from 153 wells, according to proration figures compiled by Umpire C. G. Staley for the April 16-30 period, but a year has elapsed since a complete potential gauge of all wells has been taken. Natural decline of old wells through oil and gas withdrawals and serious encroachment of sulphur water on the west flank of the field are two factors that are believed to be responsible for a substantial drop in potential flow. The allowable production of the field decreased from 31,376 to 30,500 barrels daily at the beginning of the current proration period. Operators are continuing to observe the Sunday holiday on production as followed in many areas in Texas, but cut the output one-seventh rather than to make a complete shutdown on Sunday.

Approximately 15 wells on the west flank of the Hobbs field have made sulphur water, or are still making water with the oil production. The spread of water has not been checked by lowering the output of the field by easy stages since last December, and nearly every week a new well is added to the list of those making water. The water drive is marching southward along the west flank of the field. Sacrifice of production allowances by operators as a move toward retarding the advance of the water table on their leases has been partially successful, but mostly temporary relief.

Sun Oil Company's McKinley 3, NWc NE Section 5-19s-38e, began making four-tenths of one per cent water on April 14 while prorated to 223 barrels oil daily, with a rated potential of 8675 barrels daily. Production of this well has been reduced to 125 barrels daily in order to try to check the water trouble. McKinley 2, located on the same tract with the above well, began cutting six per cent February 17, 1932, while prorated to 160 barrels, and has since increased to 50 per cent water although pinched to 55 barrels net oil daily.

Midwest Refining Company's Turner 8, located 1980 feet from the south and 560 feet from the west lines Section 34-18s-38e, was completed last week as an outpost on the east central side of the field, making 6269 barrels oil daily and about 6,400,000 cubic feet of gas from regular lime at 4005-4170 feet. Texas Pacific Coal & Oil Company's State 3-G, located near center of SE Section 24-18s-37e, is moving in materials, and is the only location given the field lately.

Jersey *Expected* To Continue Usual and Extra *Dividends*

DALLAS, TEXAS, APRIL 28.

Directors of Standard Oil Company, New Jersey, meet Monday, May 2, to act on dividend. In view of the company's strong cash position and the fact that $30,000,000 of 5 per cent debentures was retired voluntarily on February 1, it is expected that the next dividend will include the usual quarterly payment of 25 cents a share, plus an extra payment of 25 cents.

At the close of 1930, Standard Oil Company of New Jersey's surplus amounted to $549,252,775. Financial results for last year have not as yet been disclosed, although it is probable that net profits were materially short of the annual $2.00 dividend requirements. Commenting on the company's condition, The Wall Street Journal stated that aside from its strong cash position, there are two policy reasons why Standard Oil Company of New Jersey will likely declare the usual extra dividend of 25 cents in addition to the regular 25-cent payment. One of these is the fact that negotiations, nearing consummation, for the foreign properties of Pan American Petroleum and Transport Company, 97 per cent owned by Standard Oil Company (Indiana), involve an exchange of stock of the Jersey Company as well as cash. The other is that the company has retired voluntarily $30,000,000 of its 5 per cent debentures on February 1, though the issue was not due until 1946. This has set something of a precedent.

What of California's Known Reserves? . . . . . .

By BRAD MILLS
Staff Representative

THE man who writes on reserves naturally faces a difficult proposition. Probably the correct social gesture of a writer on reserves would be to go into retirement immediately after publication of his article! Mr. Mills, author of the accompanying, says, however, that if he goes into such retirement he will take with him many of the best informed men in California because the matter presented herewith is a composite of the information he has developed from others.—*Editor.*

AN analysis of California's known reserves indicates that the future supply of crude of all grades is not sufficient to prevent at least a normal recovery from present conditions, and that there is little likelihood of a fresh flood of oil from any one, or group, of fields under development.

The unknown reserves as yet undiscovered are a very questionable factor, but it appears absolutely safe to hold that California will never yield another Kettleman Hills. Certainly another Long Beach does not exist in the Los Angeles basin, and it is logical to conclude that another Ventura Avenue will never be found in the Ventura basin. The great San Joaquin valley has vast possibilities, but the area is so great that development must be slow.

The fact that only a few fields remain largely undeveloped makes the known reserves less threatening than in sections which have hardly been touched. By no stretch of the imagination can such fields as Long Beach, Santa Fe Springs, Huntington Beach and a dozen others produce as much oil as they have already produced. Such fields as Kettleman Hills, Ventura Avenue and Inglewood are notable exceptions, but such fields as these constitute the most desirable portion of the known reserves, and are under close control.

What constituted a huge reserve several years ago must not be regarded as such at the present time. Much of the total reserve is represented by oil which is not desirable for modern needs, and this changing condition forcibly shows that the total reserve must be discounted sharply to parallel market needs.

In throwing out the undesirable reserves, much of the heavy crude could not possibly upset the future market. Much of the light oil in reserve in California does not refine satisfactorily, besides yielding a gasoline with a very low anti-knock value. Some of the most desirable oil is found among the medium heavy stocks, while some of the least undesirable for refining purposes may be classed among the lighter grades.

Discovered Oil Half Recovered

Up to May 1, 1932, California had produced about 3,785,000,000 barrels of oil. Of this total, more than 60 per cent has been produced during the past 10 years. An average estimate of the oil to be recovered from existing fields is less than 4,000,000,000 barrels. Thus it is evident that fully one-half of the oil trapped in these various fields has been recovered.

Compilation of a table which shows the amount of oil recovered from the various known fields, and the amount to be recovered would immediately be attacked by those who have prejudices, or have different ideas. But the nature of most producing zones is known and it is not a difficult matter to estimate these reserves.

Estimates of a 5,000,000,000-barrel future recovery from existing fields are too high. Only two or three fields remain puzzles, and it is possible to arrive at fairly definite figures on even these areas.

The ability of a field to produce readily is as important as its ultimate yield. Such a heavy pull has been held on such fields as Long Beach, Santa Fe Springs, Midway-Sunset and Huntington Beach that their force has been spent and they can not become dangerous again. This does not mean that they will not yield a large amount of oil, but simply proves that the most dangerous period of any field is its flush period.

In arriving at a reasonable estimate of reserves, four classifications must be considered. Past experience makes it possible to determine the approximate recoverable oil in zones which are known to resemble more fully developed sands. Thus it is possible to arrive at satisfactory estimates of reserves in certain zones in such fields as Dominguez and Inglewood. Possibility of deeper producing zones than have been found is a confusing angle. The four classifications considered in arriving at the amount of oil to be recovered in known fields are:

1. Old zones in the process of depletion.
2. Known deeper zones not developed.
3. New undeveloped fields.
4. Unknown reserves as yet undiscovered.

Decline Curves

The old zones in the first classification have established decline curves which make it possible to determine the approximate reserves of these sands. Most of these zones have seen their most productive days. Such fields as Long Beach, Santa Fe Springs, Elwood (Vaqueros), Midway-Sunset, Kern River and Torrance fall in this classification.

The known deeper zones not developed are found in such fields as Inglewood, Coyote (partly developed), Ventura Avenue and Dominguez (partly developed). Good estimates of reserves in these fields can be made.

The new undeveloped fields, of which Kettleman Hills is the only one of importance, are an important classification, because the greatest field in the world happens to fall in this division. Several small fields have been found and left undeveloped, but they amount to little, when compared with the most important of all.

The fourth classification consists chiefly of the great San Joaquin valley. This vast flat area is so extensive that the untested portion is greater than all of the other basins put together. It is similar to the vast expanses of Texas and Oklahoma. It will be almost impossible to localize, but the area is theoretically favorable for oil. Discoveries will necessarily be slow and no upsetting of the market is expected from these hidden possibilities. This vast area has hardly been touched, but the deposits in the untested districts are not as thick nor as favorable as those along the west side of the valley.

Flush Yield Two-Thirds of Total

The average California field produces at least two-thirds of its ultimate yield during its flush period. This means that most of the best fields of the past are now out of the dangerous classification.

Long Beach had produced about 458,000,000 barrels of oil on May 1, 1932, and should have an ultimate yield of around 600,000,000 barrels.

Santa Fe Springs has produced 338,000,000 barrels of oil, and should ultimately yield somewhere near 500,000,000 barrels. The several producing

zones still contain much oil, but its withdrawal will not be very rapid.

Ventura Avenue is a great field and should ultimately yield around 300,000,000 barrels. Production to May 1 was about 109,000,000 barrels. If it is possible to reach the very deep zones in this field, the recovery could be increased sharply. All production to date has been in the Pliocene, but there is no reason why the Miocene should not produce satisfactorily if it can be reached.

The Midway-Sunset district has produced 715,000,000 barrels of oil, and should be good for 1,000,000,000 barrels, if given enough time. Flush production is practically a thing of the past and the output will be steady at best.

Inglewood is largely undeveloped, having produced only 81,000,000 barrels to May 1. The recoverable oil should total 220,000,000 barrels including that already produced. This is one of the most perfect fields in the Los Angeles basin, and the deeper zones are expected to produce as well as the shallow sand.

Dominguez has produced 52,000,000 barrels of oil since its discovery in 1923, and should be good for about twice as much as it has yielded. This field does not have a very large drainage area, but it is a very well defined structure.

The Coyote field has produced 129,000,000 barrels of oil since 1911, but still remains a good producer. The oil to be recovered has been estimated at 70,000,000, but the extent of the deep zone production is not known.

Huntington Beach on Decline

Huntington Beach had produced 184,000,000 barrels of oil on May 1, and has seen its best days. The amount of oil to be recovered has been estimated at 65,000,000 barrels. Still deeper producing zones are very doubtful.

The Elwood field has been a good example of one which gives up its oil in a hurry. Discovered in 1928, production on May 1 stood at 37,000,000 barrels. Even with the Sespe thrown in, this field probably will not account for more than an additional 23,000,000 barrels, or enough to make a total of 60,000,000 barrels. The field has been a remarkable producer. The sand is porous, and it has been pushed to the limit by the operators a greater part of the time.

Torrance and Montebello are good examples of fields which are nearly exhausted, unless there is some question as to deep zone possibilities at Montebello. At any rate, the present known zones are about depleted. Torrance has produced 71,000,000 barrels and probably will not yield more than 20,000,000 barrels in the future. Montebella has produced 89,000,000 barrels, and the known zones probably will not yield more than an additional 40,000,000 barrels.

The old Kern River district has produced 287,500,000 barrels, but it will never upset the market again. This area appears at least 80 per cent exhausted and probably will not produce more than an additional 70,000,000 barrels.

The combined production of Mt. Poso, Round Mountain and Fruitvale, all largely undeveloped, has been only 15,000,000 barrels. These fields will produce up to 100,000,000 barrels, but the demand for this type of crude is limited.

Kettleman Hills Not Touched

Kettleman Hills, the greatest undeveloped field of all, has produced only 33,000,000 barrels of oil and has hardly been touched. As much as 20,000 acres on the North and Middle Domes may prove productive, but much of this acreage will not produce anywhere as much as the inside leases. Estimates of an ultimate recovery of as much as 2,000,000,000 barrels have been made, but such a total appears far too high. Average estimates run around 1,250,000,000 barrels, and 1,000,000,000 barrels may be nearer correct.

The producing zone at Kettleman Hills has a great thickness, but the formation is very tight and well cemented. The decline will be rapid after the flush period has taken its toll. The field is a nearly perfect structure, but its area is definitely limited and the last 500,000,000 barrels will come slowly.

Close control of production and the objectionable features of the crude make this reserve less threatening than generally believed. The oil is far from a perfect refining stock, and the market will absorb only a limited amount of such crude. Present refinery equipment is having some trouble with Kettleman Hills oil, but it may be possible to overcome these handicaps.

The unknown reserves are not a serious threat. Due to the prevailing good exposures and extensive testing of nearly all known structures in the Los Angeles and Ventura basins, and Santa Maria district, the most accessible districts will yield nothing of major importance.

The known reserves of California probably do not exceed 4,000,000,000 barrels, and for practical purposes, even 3,000,000,000 barrels might be considered. The last one-third will come slowly, as has been shown by the rapid decline of many fields which are producing only a fraction of their former yield.

Nearly one-third of the total state reserve is represented by oil which is not desirable for current and future needs. Conditions may change to make some of this heavy oil more desirable, but such a change may change the status of certain grades of light oil which is now in demand.

No shortage of oil is predicted for California, but the known reserves are limited enough to offer distinct encouragement to the average operator.

View of the North Dome at Kettleman Hills which has as much as 20,000 acres that may prove productive.

Two Billion Barrels *Considered Conservative* East Texas Ultimate

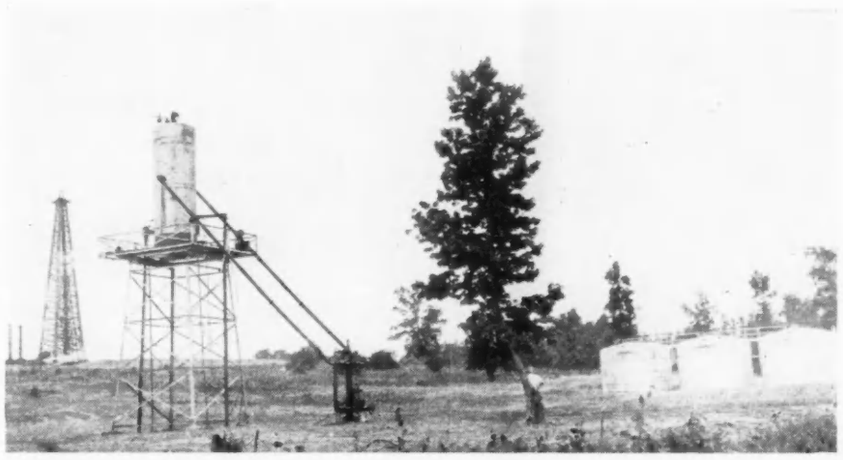
By JACK LOGAN
Staff Representative

IN the dim future, when the last remaining operator in the East Texas field shall grow sick of diminishing profits on small pumping wells, pull his pipe out of the ground, and leave the once great oil field to the historians and statisticians, it will be recorded that the ultimate recovery was a certain number of barrels of oil. Then there will rise up geologists and engineers to say "I told you so," and others to explain reasoning which was sound although failing to work. For the final yield has been freely predicted ever since the far-flung field gave the first rough indications of its productive limits about a year ago.

Those estimates have varied greatly, ranging from one billion barrels or less to somewhat over two billion barrels. Members of the East Texas Geological Society and the Dallas Geological Society, who had been devoting much time and study to the field, went on record late last year as believing the field would ultimately produce 2,100,000,000 barrels, estimating productive area at approximately 100,000 acres. (See THE OIL WEEKLY, December 25, 1931, page 64.) Issuance of that estimate by the geologists most familiar with the conditions in the field failed, however, to convince many observers, for it has been difficult to conceive of a single continuous area yielding so much oil.

But the geologists who were instrumental in making that 2,100,000,000 barrel estimate are not only sticking by their guns, but they are coming to the conclusion that they were probably conservative. For by now approximately 5000 wells have been drilled in the five-county field (Rusk, Gregg, Upshur, Smith and Cherokee Counties), making possible a much more complete knowledge of sand conditions, and the additional information has served to strengthen earlier convictions of the great production possibilities of the area.

Among those geologists who believe that two billion barrels is a conservative estimate of the ultimate recovery is J. S. Hudnall of the firm of Hudnall & Pirtle, consulting geologists, Tyler, Texas. That firm maintains complete records of all wells drilled in the field, and is constantly compiling and revising cross sections and maps showing in detail such information as oil sand thickness, percentage of sand saturated, oil-water contacts, and complete production histories of wells and leases. With that great aggregation of facts at his disposal, Mr. Hudnall has a particularly comprehensive understanding of the great oil deposit lying 3600 feet below the surface—of its awe-inspiring magnitude, stretching for 35 miles in one direction and eight miles wide in places, and of the great thickness of the oil sand over wide areas in the field.



FLOWING WELL IN EAST TEXAS

With possibly three more years of flowing production in prospect for the East Texas field, there is no haste in placing pumping equipment over the wells, and sometimes, as here, the wells are left without derricks above them.

In calculating the ultimate recovery of a field it is necessary to know the productive area; the thickness, saturation, and porosity of the oil sand; and the percentage of the original oil content which will be recovered from the sand. The information which he has at his disposal embracing the records of approximately 5000 wells, furnishes Mr. Hudnall all those factors except the last, the percentage of recovery. A fair idea concerning that latter factor is supplied in the histories of older Woodbine sand fields of eastern Texas. It is upon those comprehensive records, and definite information on sand conditions, that Mr. Hudnall bases his opinion that two billion barrels is a conservative estimate of the final recovery.

Sand Conditions

A noteworthy factor in connection with sand conditions in the East Texas field, and one which has been emphasized more than ever in recent months, is the high percentage of the proven area which is underlain with relatively great thickness of saturated oil sand. In the Gladewater-Longview district, for example, there is a relatively narrow belt around the west, north, and east edges of the field where the oil-containing sand has an average thickness of perhaps 30 feet; while the much greater area inside that marginal belt, comprising more than two-thirds of all the proven territory, has sand thickness ranging up to 80 feet or more. Thus there is the circumstance of a high percentage of the proven area having a great thickness of sand, and only a small percentage of leases having the smaller sand thickness. This condition was not amply allowed for in many of the early estimates of ultimate production, and when considered in revisions sometimes leads to upward adjustments.

Productive Area Formerly Underestimated

Another consideration which makes it appear that some of the earlier estimates of ultimate recovery in East Texas were conservative is the fact that the productive area of the field was in many instances placed too low. As late as the latter part of 1931 various authorities were assigning the field only 90,000 acres of proven area, and even the estimate of the two above mentioned geological societies at the close of the year credited the field with only 100,000 acres. It is now pointed out by observers who have gone thoroughly into the matter, however, that the field has at least 110,000 to 115,000 acres of proven area.

This material increase in the total proven area, as compared with totals formerly assigned to the field, is due

to two revisions. In the first place, drilling activities of the past several months have added proven area at both the north and the south ends of the field. In the second place, strange as it may seem, many of the original estimates were considerably too low simply because of the cumulative shrinkage inherent in mapping processes. Some of the maps from which the productive area was determined probably embodied as much as 10 per cent shrinkage in area. Only a very few original maps of the field are in existence, and most of those which have been used have been made only after going through one or several reproduction processes.

For a field of only nominal size, the shrinkage would not involve error of a great number of acres as between the original map and reproductions. But for the great East Texas field the error attains impressive proportions. If the shrinkage is 10 per cent, for instance, it involves an error of approximately 10,000 acres. One readily recognizes the great number of acres which shrinkage would involve for the East Texas field upon seeing maps of the area upon the scale of 1000 feet to the inch, the usual scale for oil field maps. The map of an ordinary field drawn upon that scale may be laid conveniently on a desk. The East Texas field mapped on that scale, however, must appear in three or more separate sections, and when those sections are placed together so as to form a continuous map showing the whole productive area, that composite map fills the full length of a large room, being nearly 20 feet long.

So extensive is the field that to attempt to add the areas of individual tracts would be like counting the stars. The most practicable methods for determining the productive area are (1) the use of the planimeter, an instrument which calculates area of irregular shaped tracts, and (2) the plan of determining the weight of a given unit of the map, and of cutting out the productive area and determining its weight, arriving consequently at the number of acres in the whole field. If the former method is employed allowance should be made for change of scale due to shrinkage, preventing the error which has been mentioned as characterizing some of the early estimates of proven acreage in East Texas. The second method given above is accurate to a surprising degree.

Past Production

Aside from sand conditions, observers look also to the actual production history of the East Texas field during the period of somewhat over a year in which it has been producing on a large scale. Here again are circumstances indicating high ultimate recovery. It has been pointed out in recent months that under the proration conditions which have existed bottom hole pressure has been declining about 15 pounds per month, indicating continued flowing life of around three more years.

If one looks to the production histories of individual wells in the field he likewise finds facts substantiating the idea of high recovery. Such records, in fact, are apt to be surprising. On a 10-acre lease in the Kilgore district of the field, for instance, there are three wells which have already produced in excess of 850,000 barrels of oil—and two of those producers have been subjected to very small production allowances under proration throughout their lives, so that the other well, completed in an early stage of development of the field, and therefore exempt for a considerable period from proration restriction, has to its credit approximately 750,000 barrels of oil.

Only Two East Texas Buyers Willing To Take On Wells

DALLAS, TEXAS, April 28.

A JOINT session between representatives of the leading crude purchasers and pipe line companies serving the East Texas field and the Texas Railroad Commission held here April 25 revealed that only two out of 16 crude buyers are willing to absorb new well connections. Acceptance of new connections by the remainder of the group was stated to be contingent upon reasonable relief being had from current daily takings, thus affording room and market demand for approximately 40 wells listed as being without connections in the field at the time of the meeting.

Servicing of wells in need of pipe line connections in the East Texas field has been handled during the past five months by the Well Connection Committee, composed of representatives of the most active purchasers, with Jack G. Pew, Sun Oil Company, Dallas, chairman. This committee has functioned to the extent of providing market relief for about 350 wells whose owners had failed to line up connections through their own efforts. R. D. Parker, chief supervisor of the oil and gas division of the Texas Railroad Commission, was present at the Dallas meeting, and was given assurance that the committee would continue its activities by holding semi-monthly meetings at Dallas. Heretofore meetings have been held in military headquarters at Kilgore.

Expansion of development work in the field lately in the face of a shrinkage in demand for connections by pipe line companies indicates that a difficult task is in store for the committee unless the production allowable for the field is kept in harmony with the market requirements. Tidal Refining Company and Sun Oil Company were the only two companies showing a willingness at the Dallas meeting to increase their outside connections, while the majority of the major buyers have lately been making efforts to curb their purchases in the field. It developed at the meeting that the north end of the field is now confronted with a transportation problem, as existing gathering lines are operating near capacity, and owners are reluctant to enlarge their systems, while there are no indications that others in the field will extend lines to this congested area.

A revised survey of the field's current drilling report reveals that there are more than 130 leases and sites now receiving their first tests, with an average of 20 additions per week lately. This class of completion is more difficult to handle than new wells on old leases, as the former must incur the extension of pipe line gathering systems, examination of titles, and installation of booster pumping unit in many instances.

Senate Committee Rejects Tax on Oil Imports

WASHINGTON, April 28.

FOLLOWING votes to retain the House tax on imported coal and to reduce the tax on imported oil to nine tenths of a cent per gallon, the Senate Finance Committee this afternoon, by a vote of 10 to nine eliminated the oil, coal and copper import taxes from the revenue bill. Yesterday the committee reduced the rate on lubricating oil to two cents per gallon.

Considerable time was spent in debating the oil tax it was learned following the committee session, the bitterness of the fight being indicated by the close vote.

The committee may yet reverse itself on these taxes and restore them to the bill but if it fails to do so an effort will be made to restore them when the measure reaches the senate next week.

MEN IN THE INDUSTRY'S NEWS

JOE C. MAXWELL

FORT WORTH INDEPENDENT OPERATOR

ELECTED BOARD MEMBER

TEXAS PACIFIC COAL & OIL COMPANY

▪ At the meeting of the stockholders last week, Mr. Maxwell, who has been actively identified with development of several fields in North and West Texas during past years, succeeds Robert C. Ream of New York on the Board.

▪ Other officials of the company were re-elected. They included: Edgar L. Marston, chairman of the Board; Edgar J. Marston, president; E. R. Lederer, O. E. Mitchell and LaRue Smith of Great Falls, Montana, vice presidents; R. Seidel, secretary and treasurer, and John Hancock, general counsel.

JOE C. MAXWELL

RALPH B. LLOYD was re-elected president of the Oil Producers Sales Agency of California, at the first regular meeting of the recently-elected board of directors.

Other officers elected include:

R. A. Broomfield, Lionel Barneson, Rush M. Blodget, vice presidents; Frederick D. Anderson, secretary; C. C. Spicer, assistant secretary; Rush M. Blodget, general manager, and Thos. H. Sherman, assistant general manager.

Executive committee: Frederick D. Anderson, Lionel Barneson, Rush M. Blodget, R. A. Broomfield, William H. Geis, Ralph B. Lloyd, and S. B. Mosher.

FOUR ranking officials of the Magnolia Petroleum Company who have been in semi-retirement for a year or more will be relieved of further active duty, but retained as directors, effective June 1. The quartet includes Frank V. Faulkner, vice president and manager of production; W. C. Proctor, vice president and treasurer; Courtenay Marshall, secretary; and Dave C. Stewart, vice president and also manager Magnolia Pipe Line Company. The average length of service in the oil industry by this group is approximately 40 years, and each has been closely identified with the spectacular growth of the company.

Retirement of these officials was approved at a board of directors meeting held here April 23 in accordance with an annuities plan maintained by the company. E. R. Brown, president, announced that the following veteran employes will replace the retiring officials: Mark J. McLaughlin, vice president and manager production; W. L. Holmes, treasurer; and T. J. Fitch, vice president and also manager Magnolia Pipe Line Company.

Fred M. Lege, Jr., director of sales, was elected vice president of both companies, while L. S. Sinclair, former assistant treasurer, will be comptroller.

M. J. CALLAHAN, assistant superintendent of pipe lines in the Northern District for Union Oil Company of California, died April 6 at San Luis Obispo, California. He had been with the company for 22 years.

J. H. JENKINS, manager of the production department for Associated Oil Company, with headquarters at San Francisco, has been visiting in Mid-Continent fields.

RALPH G. BOWMAN, formerly assistant sales manager for General Petroleum Corporation of California, has been elected a director of the company.

W. GOULD has been elected executive vice president of Shell Oil Company of California, succeeding H. R. Hallagher.

ED. L. SHEA, executive vice-president in charge of production, refining and marketing for Tide Water Oil Company, New York, and a group of officials of subsidiary companies, visited the East Texas field last week. Others in the party included: J. H. Jenkins, manager production for Associated Oil Company, San Francisco; E. H. Salrin, president, and R. B. Pringle, vice president and general manager, both of Tulsa; and Jas. R. Gahan, vice president in charge Fort Worth division office of Tidal Oil Company. The latter is one of the leading lease owners and active operators in the East Texas field, having approximately 3500 acres in the field proper.

V. C. FULLER, purchasing agent for Gypsy Oil Company and Gulf Pipe Line Company, and F. R. Oldham, purchasing agent for the Gulf Companies in Texas, spent last week in the Gulf Oil Corporation headquarters at Pittsburgh.

R. W. McILVAIN, vice president in charge of production for The Pure Oil Company, spent several days in Tulsa last week en route home from a trip to East Texas.

B. I. GRAVES, general sales manager for Associated Oil Company, has been elected a director of the company.

A. C. CARPENTER, president of the Lush Oil Company, Ottawa, was re-elected president of the Kansas Oil Men's Association during the three-day convention which closed in Wichita on Friday, April 22. J. A. Motter was re-elected secretary and M. C. Long, secretary of Golden Rule Refining Company, was elected treasurer to succeed the late A. W. Long.

N. R. PUTNAM, district sales manager for Reading Iron Company at Tulsa, has had a varied experience in the petroleum industry. His first job was at Montpelier, Indiana, with his father as roustabout at the age of 16 during vacations. After graduating from the University of Chicago, he went with Commonwealth Jewel Oil Company. Later he was with Tidal Oil Company and National Refining Company. Coming to Tulsa in 1913, he was with Gypsy Oil Company as warehouseman. In 1914, he organized the Mileage Gasoline Company which he later sold to enter the natural gasoline industry. Building the first gasoline plant under the Hope Natural Gasoline Company's patents, he continued in this branch of the industry until 1916 when he went with The Pure Oil Company as field superintendent for a period of eight years. In 1925, he accepted a position as salesman with Reading Iron Company and in 1927 he was made district sales manager at Tulsa. He is a member of the Indian Hills Country Club and the Tulsa Club. His two hobbies are fishing and bridge, and if his luck is as good at fishing as bridge, he should bring home a string of good looking fish every time he indulges in this sport.

N. R. PUTNAM

RALPH FAIR, independent operator of East Texas and Roumania, has returned to his office in Dallas from a trip to Roumania.

W. C. WOOLF, president of Keen-Woolf Oil Company, was elected president of the Independent Petroleum Association of Louisiana at an organization meeting held April 15 in Shreveport. J. E. Smitherman, oil operator and attorney, was named counsellor, and J. R. Pope, Woodley Petroleum Company, was named secretary of the organization. H. Boling of Tulsa representing the Independent Petroleum Association of America, was present at the Shreveport meeting and outlined the policies of this organization with which the Louisiana body will affiliate. Organization meetings in various parts of Louisiana are planned by the newly formed state organization.

H. W. C. PROMMELL, well known international geologist who has returned to the United States from Russia where he was employed by the Russian government in research and exploratory work, addressed the Rocky Mountain Association of Petroleum Geologists at its regular luncheon meeting Monday, April 18, at Auditorium Hotel, Denver. His subject was "Conditions in Russia."

THREE new members have been appointed to membership on the American Petroleum Institute's Committee on Accident Prevention in Oil Fields, and the committee has been called by Chairman Charles F. Roeser of the Division of Production to meet in Tulsa during the mid-year meeting of the Institute, June 1, 2 and 3. The new members are J. L. Risinger, Magnolia Petroleum Company, Dallas; Carl H. Martin, Phillips Petroleum Company, Bartlesville, Oklahoma, and Gerald O. Lockwood, The Empire Companies, Bartlesville, Oklahoma. R. E. Donovan, Standard Oil Company of California, San Francisco, is chairman of the committee, and H. N. Blakeslee, Dallas, director of the Department of Accident Prevention of the Institute, is secretary. Other members are: C. P. Anderson, Los Angeles; H. W. Boggess, Tulsa; H. E. Dischinger, St. Louis; John Hammermann, Jr., Houston; C. L. Hightower, Thurber, Texas; L. R. Hodell, Tulsa; H. W. Jackson, Bradford, Pa.; J. L. Manes, Dallas; George F. Prussing, Los Angeles; R. B. Roaper, Houston; T. N. Shaw, Casper, Wyo.; C. W. Smith, Chicago; J. P. Sutton, Findlay, Ohio, and D. J. Wallace, Tulsa.

J. S. HUDNALL

J. S. HUDNALL, consulting geologist of the firm of Hudnall & Pirtle, Tyler and San Antonio, Texas, is among the best informed observers of conditions in the big East Texas field. The firm became active in East Texas shortly after completion of the discovery well, and with Mr. Hudnall in active charge of field work, assisted by a staff of trained men, it assembled and has since then maintained thorough and comprehensive geological information on the area.

Mr. Hudnall has had wide experience in his profession in Texas and previously in Kentucky. Born at Bowling Green, Kentucky, in 1897, he was educated at the University of Kentucky, and did one year's graduate work at the school of mines, Pennsylvania State College, and one year of graduate work at the University of Chicago. He then served on the Kentucky Geological Survey for five years, working the structural geology of 10 counties and compiling a sub-surface map of the whole state.

In 1925 he came to Texas and entered consulting geology. He detailed by plane table over 3,000,000 acres in Texas, mostly in Brown, Coleman, Shackelford, Jones, Fisher, and Terrell Counties, and in Kerr, Real, and other counties of the Edwards Plateau Country.

WILLIAM NEWTON AGNEW, traffic manager of Worthington Pump and Machinery Corporation, New York City, since 1910, and assistant to the president for the past three years, died suddenly April 12 in New York. He is survived by his wife and a daughter, Mrs. Edith A. Tait.

MARKETS ~ STATISTICS

Refined Prices Generally Firm Despite Slack Demand; Crude Strength Continues; Imports Still Rising; Shipments From California to East Coast on Increase.

H. J. STRUTH, *Staff Economist, Houston, Texas*

Big Oklahoma Drop Lowers United States Production

PRODUCTION of the United States declined last week to the extent of about 21,000 barrels, dropping to a total daily average of 2,245,367, from 2,266,375 in the preceeding week. However, East Texas production increased 33,702 barrels last week, rising to a daily average for the field of 399,068 barrels. This rate of production is about 75,000 barrels a day more than the allowable previously set for that area by the Texas Railroad Commission.

Oklahoma Down

Oklahoma City and Seminole reported a material reduction in output last week which resulted in a decline in state production of 67,400 barrels a day. Oklahoma City output declined 51,000 barrels and Seminole was off 19,000 barrels. However, the allowable of Oklahoma City has been increased to 105,000 barrels a day, whereas last week's output amounted to but 89,000 barrels daily. Kansas also reported a decrease of 3075 barrels in daily production, 2310 barrels of which was reported by the Voshell pool.

California's production was lower by 3300 barrels a day last week, dropping to a daily average of 515,100 barrels. However, reports from various California fields indicate that fluctuations are becoming violent to the extent where little so-called effort to control the output of that state remains. Numerous instances are cited where certain fields are flowing wide-open and operators are paying no attention to appeals for reduced output.

Gulf Coast Limited

A new development in the Texas production situation was the decision to limit production of the Gulf Coast area to 107,000 barrels a day. Last week's production amounted to 106,636, representing an increase over the preceding week of 6521 barrels. This will be the first time that the Texas Gulf Coast area has been placed on proration, placing the entire state on a proration basis. Other increases in Texas production last week were Panhandle 2125 barrels; East Central Texas 2981 barrels; Southwest Texas 3454 barrels. West Texas production remained stable at a daily rate of 181,750 barrels.

Production east of California declined last week to the extent of 17,708 barrels, although had it not been for the sharp decrease reported by Oklahoma, there would have been a material gain. Last week's figures serve to emphasize one fact and that is higher prices have not materially affected production schedules. The trend of East Texas production is not the result of higher prices but the result of growing new development. Last week, 138 new wells were completed in East Texas, of which only one was a dry hole. The rate of new production credited to these wells was 1,104,080 barrels. Further limitation of allowable production per well is expected to have but slight effect upon the rate of development, since permits are being issued at the rate of more than 150 a week.

Weekly figures of field developments in the United States show that there is more activity than has been experienced for some time. Last week, 288 new wells were completed in the United States, including 138 in East Texas. Oil wells completed outside of East Texas numbered 87; gas wells 20. A tendency toward increased field activity is noted in Kansas and Oklahoma, along with that indicated for East Texas. Higher prices have encouraged operators to extend development into the newer areas.

THE OIL WEEKLY
Estimated Daily Average Production
Week Ending April 30, 1932

	For Week Ending April 30	April 23
Texas Panhandle	51,980	49,855
North Texas	49,220	50,150
West Central Texas	24,670	24,945
West Texas	181,750	181,650
East Central Texas	58,822	55,841
East Texas	399,068	365,366
Southwest Texas	54,096	50,642
Total Texas, outside of Gulf Coast	819,606	778,449
Texas Gulf Coast	106,636	100,115
Total Texas	926,242	878,564
Oklahoma City	89,000	140,000
Seminole	129,000	148,000
Other Oklahoma	185,500	182,900
Total Oklahoma	403,500	470,900
Ritz-Decker	11,090	11,695
Voshell	6,720	9,030
Other Kansas	77,310	77,470
Total Kansas	95,120	98,195
North Louisiana	28,425	27,300
Louisiana Gulf Coast	32,400	33,016
Total Louisiana	60,825	60,316
Arkansas	34,200	34,250
Long Beach	81,800	82,000
Santa Fe Springs	66,300	67,000
Midway-Sunset	49,000	50,000
Kettleman Hills	63,000	60,500
Other California	220,800	258,900
Total California	515,100	518,400
Wyoming	39,500	37,600
Montana	6,730	6,500
Colorado	3,410	4,150
New Mexico	36,740	37,550
Total Mountain States	86,380	85,800
Eastern States*	124,000	119,950
Total United States	2,245,367	2,266,375

*Includes Michigan.

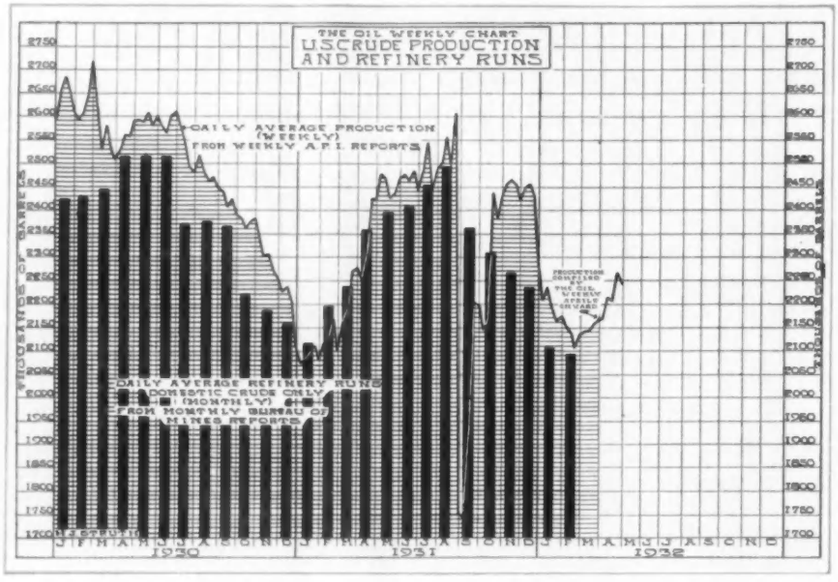
Crude Imports Continue to Mount

Imports for the week ending April 23, according to figures collected by the American Petroleum Institute, amounted to a daily average for all oil of 476,285, an increase over the preceding week of about 189,000 barrels a day. The cumulative average for the past four weeks was 429,179 barrels. Crude oil imports for the week ending April 23 amounted to 2,062,000 barrels, compared with 1,235,000 barrels in the preceding week. Gasoline imports rose to 527,000 barrels, from 152,000 barrels in the preceding week.

Gasoline Stocks Up On Reduced Runs

Figures of the American Petroleum Institute show that stocks of gasoline at refineries increased nearly 80,000 barrels a day during the week ending April 23, despite the fact that runs of crude to stills were reduced 16,000 barrels a day. Runs to stills, on a Bureau of Mines' basis, averaged 2,338,000 barrels a day, compared with 2,354,000 barrels a day in the preceding week. Stocks of gasoline at refineries were reported at 47,285,000 barrels, compared with 46,733,000 barrels in the preceding week.

The fact that stocks of gasoline were increased last week on a reduced operating schedule and were reduced in the preceding week when runs were somewhat larger, indicates that the market for gasoline has experienced a temporary lull. Jobbers have resorted to a


THE OIL WEEKLY CHART
U.S. CRUDE PRODUCTION AND REFINERY RUNS
DAILY AVERAGE PRODUCTION (WEEKLY) FROM WEEKLY A.P.I. REPORTS
DAILY AVERAGE REFINERY RUNS DOMESTIC CRUDE ONLY (MONTHLY) FROM MONTHLY BUREAU OF MINES REPORTS
THOUSANDS OF BARRELS
1930
1931
1932

cautious attitude toward making committments at the present scale of prices, being influenced perhaps by certain pessimistic comment purporting that present prices are not expected to hold. It is noted, however, that refiners are putting up a more united front in demanding ruling prices for their products and many instances are known where prospective orders at lower than market prices have been passed up.

Market Position Continues Strong

Those who have stated that the move toward higher prices could not be sustained are coming to realize that the industry has undergone a complete rehabilitation of policy. Higher prices have not resulted in the stampede for increased production, as in former years. Producers and refiners realize today that a profit is essential to their immediate welfare and are committed, collectively and individually, to the idea that profit and not volume constitutes the real yardstick by which to measure business.

Sales of refined products below the prevailing market price are being made in a few instances where crude was on hand which had been purchased prior to the advance in prices. Otherwise, the market rests upon a foundation of a continued favorable statistical position.

Pennsylvania crude prices were advanced 20 cents a barrel on April 25, and Corning oil was hiked 10 cents April 26, making the crude price advance unanimous everywhere except in California. Refined oil prices have continued to reflect the favorable turn for the oil industry and the outlook generally indicates that the season of heavy gasoline consumption will be accompanied by continued market strength.

Shipments of gasoline are not as heavy as had previously been expected, but the opinion is prevalent that jobbers will probably continue to buy only for current requirements rather than load up to capacity of their storage facilities. This is expected to result in a more stable market situation and will undoubtedly hold refinery operations more in line with market requirements.

Oklahoma Refined Market Quiet But Prices Firm

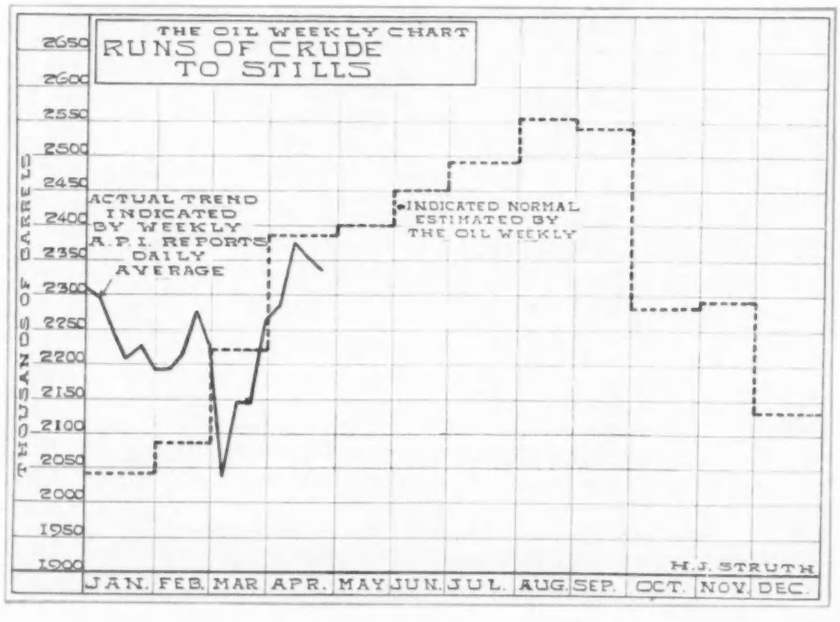
The spot market has been somewhat stagnant during the past week or 10 days due principally to the fact that large quantities of low octane motor fuels were sold early in the month for delivery during the last 15 days in April. Much of this material was contracted for at figures below the market but the situation seems to be clearing and if the anticipated May increases in consumption materialize, a strong market is expected. Prices have remained practically unchanged during the past week but movement has been slightly slower than during the first 15 days of April. However, it is understood that very little selling for May delivery is now being done.

Many refiners feel that the economic condition of most jobbers is such that large inventories will not be carried during the remainder of the year. As a result the jobber will not load up but will buy steadily from month to month. This condition should promote a more stabilized condition and result in fewer major fluctuations.

Despite the lull of the past week, prices in general have not fluctuated over a quarter cent, a decidedly favorable situation for this time of the year and under present conditions.

It is understood that the East Texas refinery situation is gradually presenting a better picture and that markets have little fear of distress due to activities of refiners in that district.

Near the end of the week one refiner


THE OIL WEEKLY CHART
RUNS OF CRUDE TO STILLS
ACTUAL TREND INDICATED BY WEEKLY A.P.I. REPORTS DAILY AVERAGE
INDICATED NORMAL ESTIMATED BY THE OIL WEEKLY
THOUSANDS OF BARRELS
H.J. STRUTH
JAN. FEB. MAR APR. MAY JUN. JUL. AUG. SEP. OCT. NOV. DEC.

Crude Runs to Stills, Gasoline, Gas & Fuel Oil Stocks

Week Ending April 23, 1932

(Figures in barrels of 42 gallons each)

District	Crude Runs to Stills: Total	Daily Average	Per Cent Operated	Gasoline Stocks (See Note Below)	Gas & Fuel Oil Stocks
East Coast	3,228,000	461,100	72.8	7,291,000	5,565,000
Appalachian	705,000	100,700	73.3	1,772,000	1,071,000
Ind., Ill., Ky.	2,186,000	312,300	72.4	6,705,000	4,184,000
Okla., Kans., Mo.	1,717,000	245,300	56.4	3,816,000	3,143,000
Texas	3,425,000	489,300	63.9	8,488,000	8,410,000
Louisiana-Arkansas	1,093,000	156,200	67.8	2,016,000	4,516,000
Rocky Mountain	331,000	47,300	32.9	2,014,000	635,000
California	3,118,000	445,400	50.4	15,183,000	96,802,000
Total week April 23	15,803,000	2,257,600	61.7	47,285,000	124,326,000
Total week April 16	15,908,000	2,272,600	62.1	46,733,000	123,874,000
Total April 25, 1931	17,030,000	2,432,900	68.1(a)	45,952,000	127,401,000
The Texas and Louisiana Gulf Coastal Figures shown below are included above in the totals of their respective districts.					
Texas Gulf Coast	2,704,000	386,300	72.7	6,898,000	5,653,000
Louisiana Gulf Coast	786,000	112,300	76.1	1,870,000	3,829,000

NOTE: Stocks at refineries, except in California district, which includes stocks of finished gasoline and engine distillate at refineries, water terminals and sales distributing stations and amounts in transit thereto.

(a) This figure is not entirely comparable with current stocks due to revisions made since original publication of this figure, for which revisions the basic information is not available by weeks. If it were possible to have made the revision, the new figure would reflect somewhat lower stocks.

is reported to have offered about 75 cars of the low octane motor fuel at 4⅛ cents and this was one of the few below the market quotations which were reported. One or two refiners are known to have some crude purchased before the crude price increase and some material may be offered below the market for several weeks.

Gasoline Shipments From California Up

Shipments of California gasoline to the Atlantic Coast increased last week to 211,000 barrels, from 160,000 barrels in the preceding week. New York received 95,000 barrels and Philadelphia 116,000 barrels. The daily average receipts of California gasoline on the Atlantic Coast was 30,143 barrels, against 22,857 barrels in the preceding week.

Pure Oil Building New Michigan Refinery

Chicago.—The Pure Oil Company has started construction of a 5000-barrel refinery near Midland, Michigan, on a 40-acre site adjacent to the works of Dow Chemical Company. Decision to erect this refinery comes after several months of supplying the Dow plant with its fuel needs, which has been comprised of unrefined crude from the Mount Pleasant, Michigan, field. After completion of the plant, which is located on the company's six-inch pipe line en route to its terminal at Bay City, Michigan, The Pure Oil Company will be enabled to meet the needs of the chemical company more economically.

The plant will consist of a tube still installation, a gasoline recovery and stabilization system, tankage and standard auxiliaries.

Company engineers have designed the plant which is being erected by Alco Products, Inc., at a reported cost of $350,000.

Summarized Review of Field Results

	Completions	Oil Wells	Gas Wells	Failures	Initial Prod.
Arkansas	5			5	
California	5	5			3,350
Illinois	1			1	
Indiana	8	1	3	4	55
Kansas	8	8			3,173
Kentucky	14	9	2	3	930
Louisiana	4	2		2	1,215
Michigan	4	3		1	7,900
Mississippi					
New Mexico					
New York	4	4			13
Ohio	13	4	7	2	531
Oklahoma	17	10	3	4	11,425
Pennsylvania	15	13	1	1	114
Texas	186	164	1	21	1,114,678
W. Virginia	4	1	3		2
Totals	288	224	20	44	1,143,386

Financial Report Shows Profits as Well as Losses

Despite unsatisfactory conditions in the oil industry last year, some companies managed to show a profit from operations. While a majority of financial reports issued thus far have shown severe losses, a number recently received managed to close 1931 with a net profit. Following is a summary of net profits or losses shown by statements received from 28 companies, covering their operations for 1931:

Financial Results for 1931

	Net Profit	Net Loss
Amerada Petroleum Co.	.....	$1,701,648
Standard Oil Co. of Ohio	$2,359,173	.....
Humble Oil & Refg. Co.	2,765,092	.....
The Texas Corp.	.....	9,954,478
Gulf Oil Corp.	.....	23,670,052
Ohio Oil Co.	.....	21,488,763
South Penn Oil Co.	.....	820,191
Panhandle Producing & Refining Co.	.....	515,644
Indian Refining Co.	.....	3,130,987
Atlantic Refining Co.	513,750	.....
Sun Oil Co.	3,107,146	.....
Standard of California	16,000,000*	.....
Mid-Continent Pet. Corp.	.....	*6,000,000
Eureka Pipe Line Co.	205,621	.....
Skelly Oil Co.	.....	2,117,110
Simms Petroleum Co.	.....	2,651,222
Texas Pacific Coal & Oil Co.	.....	1,413,235
Continental Oil Co.	.....	10,683,313
Rio Grande Oil Co.	.....	2,476,499
Union Oil Co.	3,054,913†	.....
Houston Oil Co.	.....	356,484
Cities Service Co.	22,769,806	.....
South Penn Oil Co.	.....	787,772
Standard Oil (Indiana)	17,590,000*	.....
Tidewater Associated Oil Co.	.....	4,491,281
Socony-Vacuum Corp.	.....	4,169,248
Shell Union Oil Corp.	.....	27,008,310
Louisiana Oil Ref. Corp.	.....	2,330,719

*Estimated.

†Subject to inventory losses.

CRUDE PRICE CHANGES

Effective April 25, Pennsylvania grade oil was advanced 20 cents a barrel by leading purchasing companies, making top pirce $2.02 a barrel.

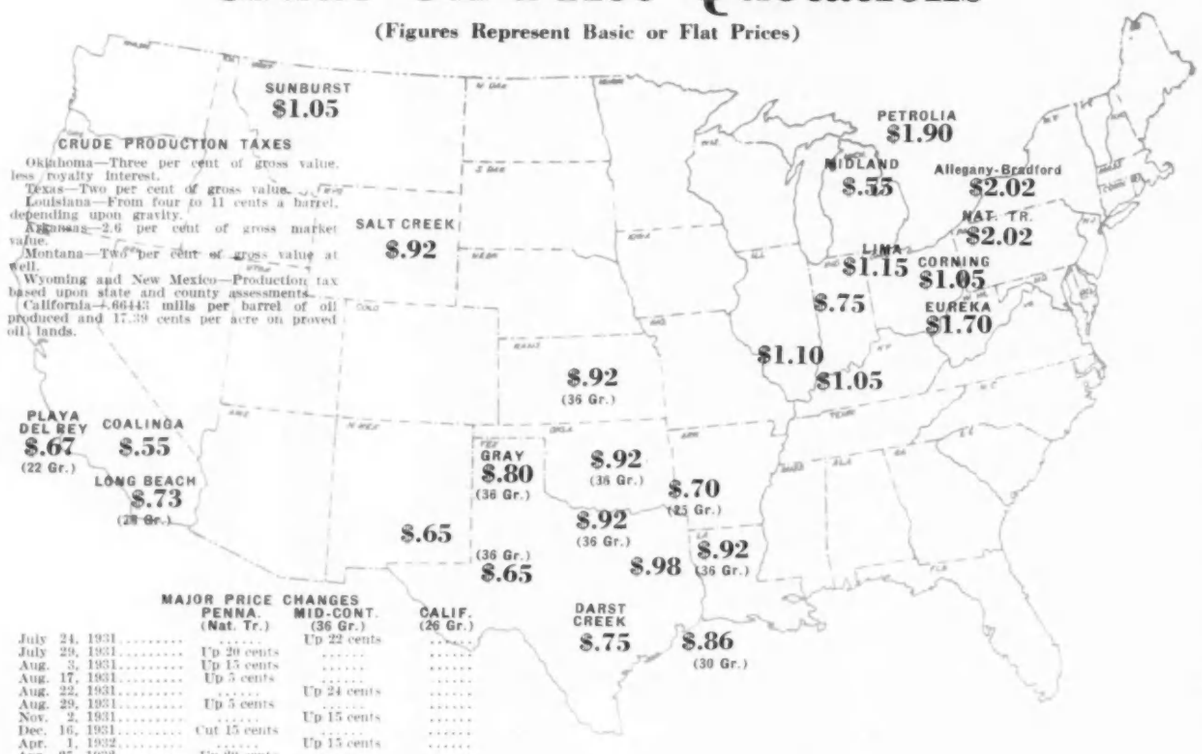
Effective April 26, Corning crude was posted at $1.05, an advance of 10 cents a barrel.

Comparison of Permits Granted for New Wells

	For Week Ending Apr. 23	Total This Mo.	Total This Year	Total This Date Last Year	1931 Year Total
Arkansas		5	7	17	34
California	7	25	85	125	342
Louisiana	20	52	139	112	309
Kansas	13	41	164	158	475
Oklahoma	28	102	342	387	842
Texas	231	802	2,220	1,696	6,961
Total	299	1,027	2,957	2,495	8,963

Crude Oil Price Quotations

(Figures Represent Basic or Flat Prices)



MAJOR PRICE CHANGES

	PENNA. (Nat. Tr.)	MID-CONT. (36 Gr.)	CALIF. (26 Gr.)
July 24, 1931	.....	Up 22 cents	.....
July 29, 1931	Up 20 cents	.....	.....
Aug. 3, 1931	Up 15 cents	.....	.....
Aug. 17, 1931	Up 5 cents	.....	.....
Aug. 22, 1931	.....	Up 24 cents	.....
Aug. 29, 1931	Up 5 cents	.....	.....
Nov. 2, 1931	.....	Up 15 cents	.....
Dec. 16, 1931	Cut 15 cents	.....	.....
Apr. 1, 1932	.....	Up 15 cents	.....
Apr. 25, 1932	Up 20 cents	.....	.....

Official Postings and Differentials

(Revised to April 29, 1932)

California: (Effective June 19, 1931.)

Signal Hill, Seal Beach and Alamitos Heights: 14 to 22.9 gravity 65 cents; 23 gravity 67 cents with differential to two cents for each degree upward. Top price for Signal Hill, 30 gravity, 81 cents; top price Seal Beach and Alamitos Heights, 27 gravity, 75 cents.

Huntington Beach: 14 to 21 gravity, 65 cents; 22 gravity, 66 cents with differential of two cents for each degree upward. Top price, 27 gravity, 76 cents.

Inglewood: 14 to 19.9 gravity 65 cents; 20 gravity 66 cents with differential of two cents for each degree upward. Top price, 25 gravity 76 cents.

Playa Del Rey: 19 to 20.9 gravity 65 cents with differential of one cent for each degree upward. Top price, 25 gravity, 70 cents.

Olinda and Brea Canyon: 14 to 19.9 gravity 65 cents; 20 gravity 66 cents; 21 gravity 67 cents; 22 gravity 68 cents with differential of two cents for each degree upward. Top price, 28 gravity, 80 cents.

Coyote Hills: 14 to 22.9 gravity 65 cents; 20 gravity 66 cents; 21 gravity 67 cents with differential of two cents for each degree upward. Top price, 28 gravity, 79 cents.

Santa Fe Springs: 24 to 26.9 gravity 65 cents; 27 gravity 68 cents; 28 gravity 71 cents; 29 gravity 73 cents; 30 gravity 75 cents; 31 gravity 78 cents; 32 gravity 80 cents; 33 gravity 83 cents; 34 gravity 85 cents; 35 gravity and above 87 cents.

Whittier, La Habra and Montebello: 65 cents a barrel.

Torrance: 14 to 21.9 gravity 65 cents with differential of one cent for each degree to 25 gravity and two-cent differential for 25 gravity. Top price, 25 gravity, 70 cents.

Richfield: 14 to 20.9 gravity 65 cents; 21 gravity 66 cents with differential of two cents for each degree upward. Top price, 25 gravity, 74 cents.

Elwood: 33 gravity 79 cents; 34 gravity 81 cents with differential of three cents for each degree upward. Top price, 36 gravity, 87 cents.

Newhall, McKittrick and Kern River: 55 cents a barrel.

Midway-Sunset, Elk Hills and Buena Vista Hills: 14 to 21.9 gravity 55 cents; 22 gravity 56 cents; 23 gravity 58 cents; 24 gravity 61 cents; 25 gravity 64 cents; 26 gravity 66 cents; 27 gravity 68 cents; 28 gravity 71 cents; 29 gravity 74 cents; 30 gravity 76 cents.

Lost Hills: 14 to 20.9 gravity 55 cents; 21 gravity 57 cents; 22 gravity 59 cents; 23 gravity 60 cents; 24 gravity 62 cents; 25 gravity 64 cents; 26 gravity 66 cents; 27 gravity 67 cents; 28 gravity 69 cents; 29 gravity 71 cents; 30 gravity 72 cents.

Coalinga: 14 to 24.9 gravity 55 cents; 25 gravity 57 cents.

Wheeler Ridge: 55 cents a barrel.

Athens, Dominguez and Rosecrans: 24 to 24.9 gravity 69 cents with differential of two cents for each degree upward. Top price, 34 gravity, 89 cents a barrel.

Oklahoma, Kansas, North Texas (Effective April 1, 1932)

Below 29 gravity; 76 cents, with differential of 2 cents for each degree to 40 gravity and above which is posted at $1.00.

Texas Panhandle: (Effective April 1, 1932)

Gray County: Below 35 gravity: 71 cents, with differential of 2 cents for each degree to 40 gravity and above which is posted at 88 cents.

Carson and Hutchinson Counties: Below 35 gravity; 66 cents with differential of 2 cents for each degree to 40 gravity and above which is posted at 78 cents.

West Texas: (Effective April 1, 1932).

Crane-Upton, Crockett, Ector, Howard-Glasscock, Pecos and Winkler Counties, Texas, and Lea County, New Mexico: 65 cents a barrel.

Southwest Texas: (Effective April 11, 1932)

Refugio: Heavy 80 cents.

Refugio: Light: (Same as Gulf Coast—see below).

Gulf Coast: (Effective April 1, 1932).

Goose Creek, Hull, Liberty, Orange, Pierce Junction, Mykawa, Moss Bluff, Raccoon Bend, Barbers Hill, Sour Lake, Spindletop, Sugarland, West Columbia, Humble and Refugio Light: Below 25 gravity: 80 cents, with differential of 1 cent for each degree to 40 and above which is posted at $1.00.

Mirando: 75 cents; Salt Flat: 60 cents; Darst Creek: 75 cents; Pettus: 85 cents; Markham: 67 cents.

East Texas (Effective April 1, 1932)

Flat Price: 98 cents.

North Louisiana and Arkansas: (Effective April 1, 1932)

Caddo, Homer, Haynesville, Bull Bayou, Sabine, Cricton, De-Soto, El Dorado, Cotton Valley, Sarepta, Cartersville: Below 25 gravity 68 cents with differential of 2 cents for each degree beginning with 25 gravity and ending with 40 and above. Top price $1.00 a barrel.

Smackover: 65 cents.

Rocky Mountain States: (Effective April 11, 1932).

Salt Creek: Below 29 gravity 76 cents; 29-29.9 gravity 78 cents, with differential of 2 cents each degree to 40 and above. Top price $1.00.

Elk Basin and Grass Creek: $1.20; Big Muddy: 98 cents; Lance Creek, $1.15; Rock Creek: $1.00; Sunburst: $1.05; Osage: 98 cents; Cat Creek: $1.20; Pondera: 90 cents; Hogback, New Mexico: 80 cents.

Mid-Western States: (Effective April 11, 1932)

Lima: $1.15; Indiana: 75 cents; Illinois: $1.10; Princeton: $1.10; Wooster: $1.25; Western Kentucky: $1.05.

Pennsylvania: (Effective April 25, 1932).

Bradford District: $2.02; National Transit Oil: $2.02; Southwest Pennsylvania Pipe Line Oil: $1.75; Eureka Pipe Line Oil: $1.70; Buckeye Pipe Line Oil: $1.55; Corning Crude: $1.05.

Michigan: (Effective Oct. 9, 1931). Midland: 55 cents a barrel. Muskegon: 61 cents to 85 cents a barrel.

Canada: (Effective Nov. 3, 1931).

Petrolia: $1.90; Oil Springs, $1.97.

Observations from the Derrick Floor

TOM WORKMAN
Rankin, Texas

IN an article published in THE OIL WEEKLY of January 1, 1932, written by Mr. Fred C. Carstarphen on the subject of "Stresses in Wire Rope Drilling Lines," the author mentions the fact that there is something fascinating about the driller's job on a deep well. In the last few years the necessary depth for a well to be called a deep well has changed considerably, but there is a fascination about drilling any well whether of ordinary depth or one of the really deep ones. The driller on a rank wildcat well might be compared in a way to the explorer who covers uncharted territory. The driller is exploring new formations and cannot tell what the next run may uncover. In a proven field his work is fascinating because of the competition always present. There is competition between the drillers on the same well and they unite forces to beat the crew on a nearby well to the pay sand. In most fields the producer's representative makes the rounds of the wells every morning to gather up the daily drilling reports. Just let two or more wells in the field start up at near the same time and the lad who gathers up the reports will be eagerly looked for so that comparisons can be made as to the progress of the different wells.

The point I am trying to bring out is that there is keen competition between drillers and that anything which will increase their efficiency will be warmly welcomed. Mr. Carstarphen uses mathematical calculations to arrive at the proper drilling motion to be run, i.e. the number of revolutions of the band wheel per minute at different length drilling strokes, and the amount of stretch that may be safely pulled in wire drilling lines without breaking them. There are probably few drillers who could understand these calculations, but there are many who understand the many things which unite to govern the way drilling tools should be run. I will try to explain a few of these things as they are seen by the man on the derrick floor.

Drillers "Sixth Sense"

A driller seems to become attuned to the vibrations around a rig and does his work as though he were a part of the machinery. The jar of the tools hitting bottom sets up a vibration which travels up the line and is transmitted to the rig. This makes anything that is loose around the rig rattle with every blow that is struck. As we go deeper it takes longer for this jar to travel to the surface and it is not felt until the beam is increasingly higher on the up stroke as the depth increases. An experienced driller doesn't have to feel of the line to tell what the tools are doing. He can tell by looking for this jar or by listening for the noises it causes.

The driller has to run whatever kind or size of line the contractor furnishes, although his opinion may have some influence in the matter of selecting lines. The contractor is more often influenced by the price, by the size of the discounts, by satisfactory service formerly given, and by the adjustments he has received on lines that have proven unsatisfactory. New lines are rarely used to spud in a well. Short lines are generally on hand for this purpose and are the remnants of lines which were once long. Good drillers endeavor to get all the service possible out of a wire line before junking it.

The principle of cable tool drilling is to mash up the formations and mix them with water so they can be bailed out in the form of mud. Very often water sands are encountered and the hole fills up quite a ways with water and it is necessary to drill ahead with this water in the hole until the point is reached where it is desired to set casing. This slows up drilling considerably and also slows up the motion that can be run. There are many things to be considered when we talk about motion. The hardest part of learning to drill is to learn how to run the correct motion at all times. Some of the things which have to do with motion are the length of the stroke, the condition of the hole, the weight of the tools, the size of the hole, and the elasticity of the drilling line. The length of the stroke of the walking beam is controlled by the position of the wrist pin in the crank. Most cranks in common use are of the four-hole type and permit a choice of four different strokes. The hole that permits the shortest stroke is called the first hole and the one which permits the longest stroke is called the fourth hole. The second and third holes are generally used for drilling purposes and all four holes are used for various purposes in fishing for lost tools. The second hole stroke is usually used for the first four or five hundred feet, as it is easier on the line and tool joints, especially where hard formations are encountered at this shallow depth.

Length of Stroke

The length of the stroke of the tools at the bottom of the hole is greater than the stroke of the walking beam. When the walking beam is at the top of its stroke the weight of the tools is entirely off the line. At shallow depths the line shows considerable slack above the floor and the temper screw has to be bridled to prevent its swinging back and forth. Motion is controlled by the fact that everything which goes up must come down. If we are running in the third hole the tools will naturally be thrown higher than they would be if we were running in the second hole. It will take longer for the tools to get back to bottom which means that the longer the stroke the slower the motion must be. In fact, the faster the motion is the higher the tools will be thrown, but when the point is reached where the beam starts back up before the tools have time to reach bottom then we have passed the point of efficiency in motion. If we increase the motion sufficiently the tools will never hit bottom but will be caught on the line already started back up even though the tension is such that the tools will hit properly when the motion is slowed down to the proper r.p.m.

Most drillers endeavor to run all the motion possible under existing conditions. Very often when drilling in a hole full of water in a large sized hole and at a shallow depth,

the hole will fill up with cavings for a foot or more while the mud is being bailed out. The bailer will not pick up these cavings but will take out all the mud, leaving practically clear water for the next run. On running the tools back in the hole these cavings must be mixed up before any new hole can be made. This can be done much easier by running a slightly slower motion than a drilling motion until the tools are back on bottom. The tools have a great tendency to stick in these cavings but will run very smoothly once they have hit a few good licks on bottom unless the hole is caving excessively. When the tools stick at a shallow depth there is not enough elasticity in the cable to permit the beam to turn over with them stuck. They must either pull loose, stall the engine, or break the drilling line or walking beam. They generally pull loose but even then a severe strain is thrown on the drilling line, walking beam, pitman and belt. Any good driller knows the proper procedure to follow, when the hole is in this condition, so as to get on bottom without tearing up any of the equipment or subjecting it to undue strain. You couldn't tell a driller that since he was 400 feet deep he should set the motion at 45 r.p.m. and expect him to hold it there, but he will naturally run at the proper r.p.m. under the existing conditions.

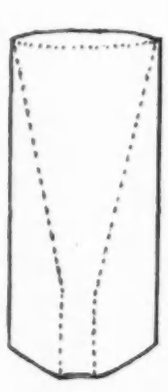


FIGURE 1

FIGURE 2

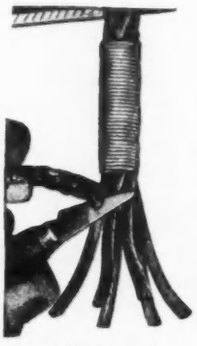


FIGURE 3

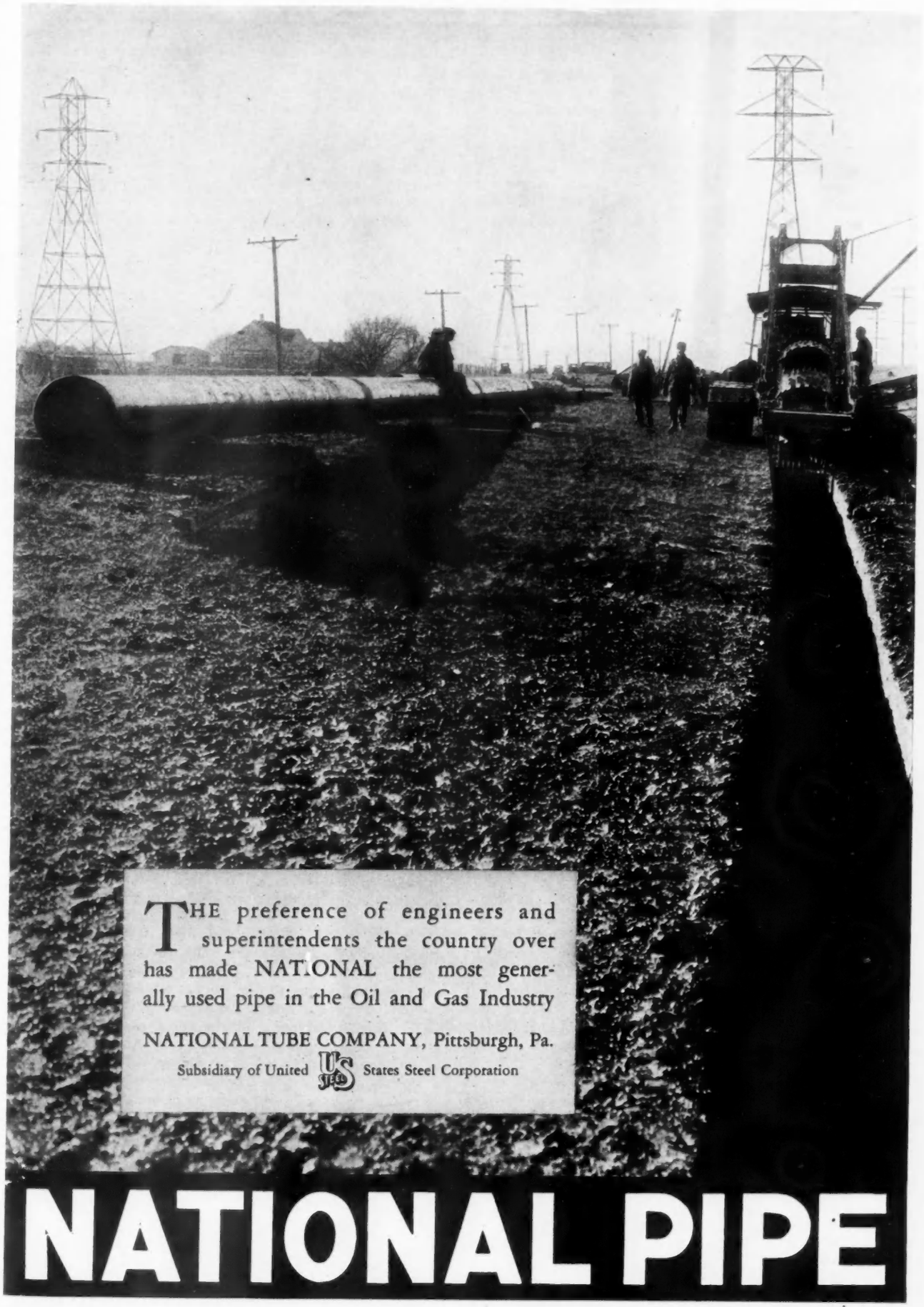
I remember of long ago hearing an experienced and capable driller in Ohio say that it was possible to run more motion on hard rock than on soft formations. He had never drilled with any power except steam. After we started drilling with electric motors we found that in running on hard formations that the motion was faster with the same amount of power turned on. With the type of control we were using it was impossible to make any slight adjustment to the motion such as can be made with a steam engine by turning on a little more steam or turning off a little. Controls are now available which permit a more delicate adjustment of the power and are more satisfactory. Electric motors are a fine thing for the young driller just beginning to drill for the speeds are numbered and he can be told just where to set the controls for the proper motion. In drilling with steam power the steam pressure will often vary enough to affect the motion which may puzzle the young driller.

Different types of engines used in drilling require different sizes of fly wheels. The single-cylindered internal combustion engines require heavy fly wheels as the crankshaft receives only one power impulse to each complete revolution. The momentum of the heavy fly wheels is necessary to carry the piston back so that it will compress the explosive mixture for the next impluse. In multi-cylindered engines these heavy wheels are not necessary as the power impulses are more frequent. Electric motors do not require any fly wheels at all as their power is constantly applied. When the load on a steam engine is great enough to hinder the fly wheel from carrying the crankshaft from one impulse to the next a balance rim is bolted to the fly wheel which increases the momentum and power. Internal combustion engines which handle the tools perfectly on the beam will sometimes be too weak to pull the same tools out of the hole satisfactorily. It is possible to drill a well with any kind or type of motor or engine if it has sufficient power.

Care of Lines

Every wire line manufacturer puts out literature in which he tells how to take care of wire lines and the method by which they should be fastened to the tools. It is the customary practice in the oil fields to use what is called a swivel rope socket for drilling purposes. This is exactly what the name implies, for instead of the line being fastened solidly to the tools it is really a swivel connection. For about 12 inches the hole in the rope socket is just large enough to admit the line readily. It then enlarges to permit the operation of the swivel which is fastened on the end of the line. Figure 1 shows the shape of this swivel with the dotted lines showing the opening. Most wire line manufacturers recommend that the line should be shoved through this swivel and then the wires broomed out as shown in Figure 2. The swivel is then shoved down until it is flush with the end of the line and the opening is filled with molten zinc. Tests to destruction show that a line socketed in this manner will break before it will pull out of the socket. This may all be true but there are more strains applied to swivel socket used in drilling than just a steady pull. There is considerable twisting strain caused by the twist in the wire line and considerable pounding caused by loose running, especially at the beginning of each run. If you will look at Figures 1 and 2 you will see that if the swivel is filled in the above manner the solid line will come just below the point where the opening starts to enlarge. The small part of the opening is barely large enough to admit the line and this does not leave much room around the solid part of the line for the molten metal. Very few contractors furnish any other metal except No. 4 babbitt for this purpose. After being run in the hole for a while the metal will often work out of the swivel from around the solid part of the line. This puts all the strain below where the line is seized and often results in a twist-off.

It is usually customary to refill the rope socket about every 36 hours. One reason for this is that the line wears in the small part of the rope socket where it cannot be seen. Each driller has his own pet way of filling the swivel which he will use unless ordered to do differently. After trying several ways and talking to a good many different drillers on the subject, I have found that the method which permits the solid line to go to the bottom of the swivel is the most satisfactory. This is done by preparing the line as shown in Figure 3. The ends are then heated to enable them to be easily turned back along the line, which permits the solid part of the line to go to the very end of the swivel. In fact it is possible to do away with the babbitt altogether by wrapping enough hemp string under the turned-back ends to make a large enough knot to fill the cavity in the swivel. However I do not recommend this method although I have seen it used satisfactorily. We use babbitt metal in refilling our swivels and run them 72 hours


THE preference of engineers and superintendents the country over has made NATIONAL the most generally used pipe in the Oil and Gas Industry
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Subsidiary of United States Steel Corporation
NATIONAL PIPE

before refilling, and rarely find one then that looks dangerous or is badly worn.

There are two sizes of wire lines most commonly used in oil field drilling, the seven-eighths and one-inch lines. When wire lines took the place of the manila cable the seven-eighths-inch line was most commonly used. In the last few years the one-inch line has been gaining in popularity. Of two lines made of the same materials, the one-inch has a greater tensile strength and will stand abrasion better. It also costs more per foot than the seven-eighths-inch line. Both lines are constructed of six strands with 19 wires to the strand. Each strand is composed of seven inner wires and 12 outside wires. The outside wires are exposed to abrasion on the wall of the hole. The wires in a one-inch line are necessarily larger than those in a seven-eighths line. So that with the same amount of wear a one-inch line is still stronger than a smaller line.

Faulty manufacture of wire lines is a thing of the past. No more do we see lines that have a high strand, that is, a strand that is not twisted as tight as the other strands and which stands out so as to receive the most wear. Wire lines are lubricated at the factory, either externally or internally. It is also possible by using a lubricating device to thoroughly lubricate them while they are being run in the hole. Rust and corrosion are two of the greatest enemies that wire lines have. Wire lines which are not properly taken care of deteriorate very fast, especially when they are not being used. In many places it is necessary to dump the drilling water on bottom instead of pouring it in the top of the hole. This is done to prevent the water from running down the wall and causing the formations to cave. In bailing out, the mud will often slosh out of the bailer and accumulate on the wall of the hole. From there it is transferred to the wire line during drilling until it is sometimes impossible to tell the line from a smooth rod. This mud often contains salt and if it is not removed when a line is spooled it will cause the line to rust badly.

Avoid Bends

In handling wire lines great care should be taken not to get any short bends in them. Wire lines are flexible but will not stand a short bend. It is necessary to bend them the opposite way to straighten them back and they never are as good as they originally were. The place that is bent is always the first place to show wear. One frequent source of these bends used to be the pins in the tug wheel on the bull wheels. In rolling off line to get enough slack for various purposes the line would have a tendency to lay over toward the tug wheel and unless it was kept tight would often catch in these pins. Most drilling crews eliminate this source of danger by removing the pins from the tug wheel, leaving a smooth surface with nothing to catch the line. In removing a line from the reel to the bull wheels it should never be run through a small pulley or snatch-block, but should be run through a pulley with a large sheave such as a tubing block. Care should be taken that the dividers on the bull wheel shaft are in good condition and are properly spaced for the line to spool correctly.

Very few drillers use a temper screw any more to let the tools down but accomplish this by loosening the clamps and letting the line slip through the amount required. This saves time, as the temper screw is only long enough to permit a let-down of five or six feet which is usually the minimum amount of hole possible to each run, and in such formations as salt runs of 15 to 20 feet are common. To use the temper screw in making such long runs would necessitate hitching over several times. To make the process of slipping through the clamps as easy on the line as possible, the line should be thoroughly greased or oiled above the clamps so that it will slip freely. There are several styles of clamps on the market which allow complete control of this slipping operation in as much as the line can be slipped through in the exact amount required. With a rusty line it is impossible to control the amount slipped to any great extent as the clamps have to be loosened considerably before they will turn loose of the line and then it may slip six inches and it may slip several feet. This is bound to be hard on the line and it often results in getting too much line in the hole for the proper tension, but if the line eases through a little at a time the tension can be kept just where the driller wants it.

In Mr. Carstarphen's article he gives a table to show the stretch that may be pulled out of various lengths of wire lines of a certain size. He mentions the fact that this table may be of value in estimating how hard to pull on a line in case of a fishing job or stuck tools. I take it for granted that this table means lines that are new. After a line has been run in the hole for any length of time it is probably weaker in places than a new line would be and it would be hard to determine just how much the wear would effect this table. Fishing jobs are not overcome by hard pulls on the wire line. In fact drillers are very careful when fishing, for a hard pull might break the line and leave the fishing tools in the hole on top of the tools already lost.

Tapered Lines

Tapered wire lines are sometimes used in drilling very deep wells. They are made of two or three sizes of line with the smallest size to be run next to the tools and the largest size on top. The tapered place between different sizes is usually about 50 feet long. We had an interesting experience during the summer of 1931 while using a tapered line which was seven-eighths on the bottom and one-inch on top. It is a well known fact that very few holes are absolutely perpendicular and some holes are often far off of perpendicular. The hole of which I am going to tell was thought to be fairly straight until we found out different after putting on this tapered line. We had set about 1300 feet of 10-inch casing to shut off water. Just below the casing was six or seven hundred feet of salt and the balance of the hole was through anhydrite shells and red sandy shale. The tapered line was put on after we were more than 3000 feet deep and with the hole open below the 10-inch casing. The line was second hand and had been used on one of the deep wells of the Big Lake Oil Company in Reagan County, Texas. After running this line a few days, we cut two or three hundred feet off the bottom end next to the tools. On running the tools back into the hole it was necessary to back them up and down several times to get them to go to bottom. We thought nothing at the time as to what might cause their stopping. When we were about 3800 feet deep we cut off quite a long piece of line on account of it being worn. This placed the taper below the pipe in the open hole. On running back in the hole the tools stopped about 40 feet off bottom. They were pulled out and the bailer run and it went right to bottom. The bailer was pulled out and the tools run back and they stopped again in about the same place. After several hours of swinging we managed to get the tools on bottom and in a short time they were running correctly. Several times after this we cut off small amounts of line and would always have a little trouble in getting the tools to bottom and only when the line was cut off would we have this trouble. This showed that the hole was not perpendicular and that the line had sawed a groove in the wall on the inside of the curve. As the line did not wear excessively, and from checking the log, we decided that this groove or slot must be in a ledge of anhydrite. As long as there was no great change in the size of the line there were no indications of a slot, but when the tapered place came down to this slot it wedged there tight enough to hold the weight of the tools.

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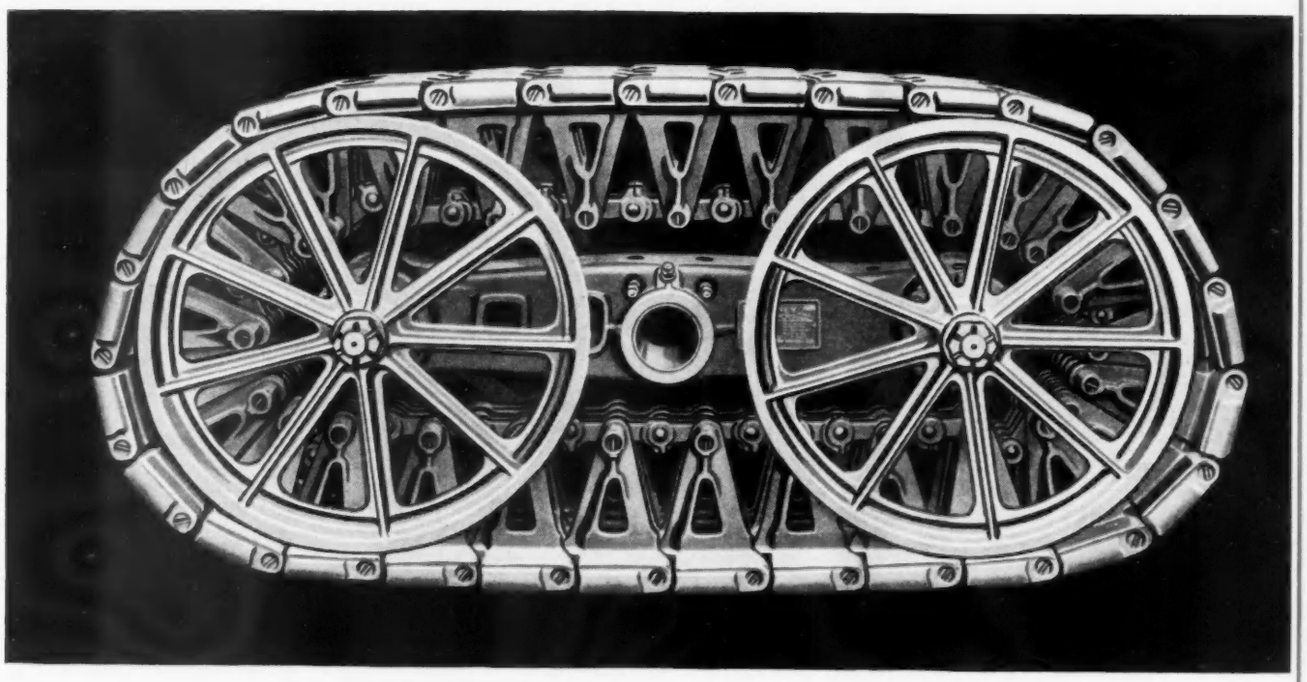

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Cooperative Pressuring Makes "Depleted" Pool Pay

J. C. ALBRIGHT

THE problem that confronted Delaware Consolidated Oil Company was a difficult one to solve when it took over the production embraced in the old Delaware extension pool, a west extension of the north end of the Nowata district in Nowata County, Oklahoma — in order to handle the various leases involved, in a unit operation project for repressuring.

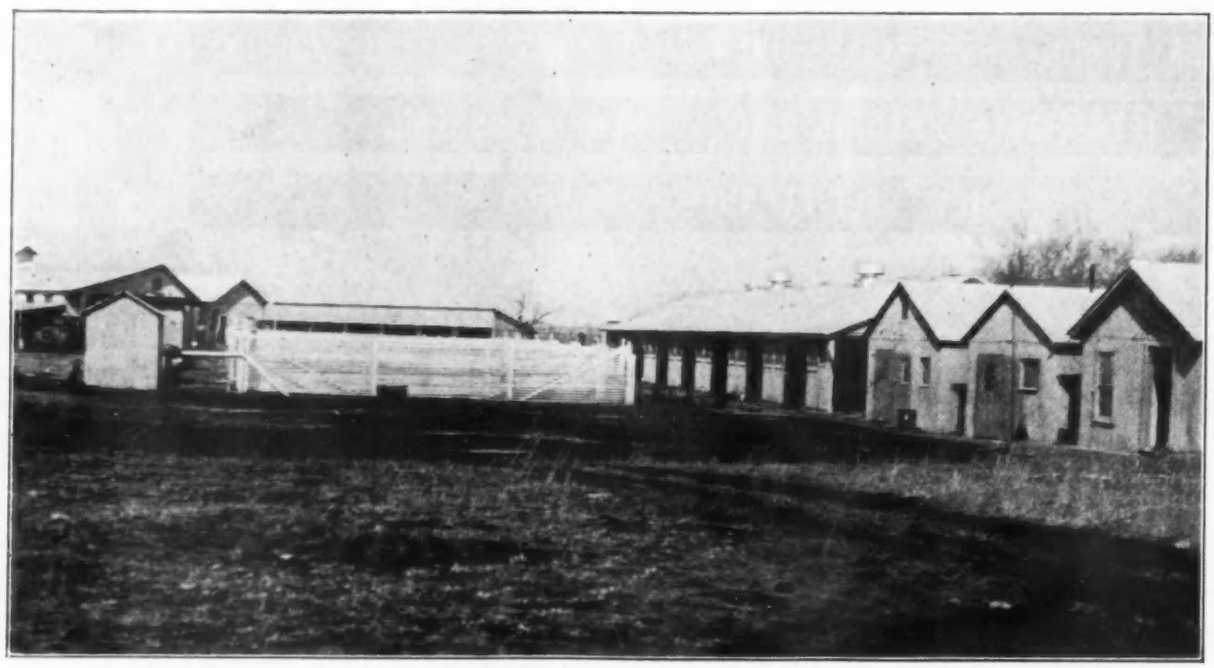
The pool extends over an area about seven miles from east to west, with an average width of approximately three-fourths of a mile, taking in parts of Sections 12 and 13, T 27n, R 14e; Section 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26 and 27, T 27n, R 15e; and Sections 19 and 20, T 27n, R 16e; Nowata County, Oklahoma.

There had been about 650 wells drilled in this pool producing from the Bartlesville sand, which the drill picked up at a depth of 800 feet to 1200 feet below the surface. Most of wells when drilled into production in 1910-13 were quite small producers, a few of them, however, had an initial production of around 500 barrels, flush. From the inception of the field until January 1, 1926, there had been recovered approximately 2,000,000 barrels of oil from the entire pool.

At that time only 359 of the original producing wells were being pumped, with an average production of less than one-half barrel of oil each per day, with a total lifting cost in excess of $1.10 per barrel. One hundred-twenty-nine of the original number had been found unprofitable and had been pulled and plugged. One hundred-fifty-one of them were standing idle with water flooding the sand from infiltration through the casing where the corrosive water of the Oswego lime had eaten holes through the pipe.

In the latter part of 1925, Messrs. Dunn and Lewis of Tulsa, prevailed upon the several operators to consolidate their holdings into a unit company which would be formed to apply repressure in the hope that the method would rejuvinate the remaining active wells, and if successful, it would permit production to be carried on at a profit. The various leases were put on a test to determine the production, and were turned over to the newly formed Delaware Consolidated Oil Company in exchange for its stock issued on a basis of $3000 per barrel, even when production could commonly be purchased for less than $1500 per barrel.

With this rather high capitalization, the company has been able to show a profit on the venture. During the past year, (1930), there were produced 173,912 net barrels



Engine room of Delaware Consolidated Oil Company, with air and gas cooling coils in center

A typical input well of Delaware Consolidated Oil Company

of oil at a total expense of $80,485.76, leaving the company with a net income for the entire year of $112,529.08, not counting depreciation or depletion. To do all this, many things had to be accomplished, principally those things having to do with the strictest economies.

Consolidation of the properties was accomplished in December 1925, and the new company began erection of the compressor station early in January, 1926. There were two small gasoline plants on the properties but the casinghead gas had been reduced to such a small volume that a very high vacuum was being applied to the sand in an effort to maintain production and to enable the plants to return sufficient residue gas to the field in order that the pumping powers might also be operated. The gathering lines from the casingheads and the return residue lines through long use had become for the most part unfit for salvage.

The properties in the consolidation were divided into two divisions, that part east of the half section line in 21-27-15 being termed the "east extension," while the remainder of the field west of that line was called the "west extension."

While the compressor station was being built, the company found that from a commercial standpoint, the success of the venture would depend much more upon keeping expenses to the lowest possible minimum, rather than to make an extraordinary effort to increase the production of oil.

Surface Equipment Poor

The surface equipment was in a general run down condition. The most alarming thing was the fact that additional wells were going to water at the rate of from two to three per week, from corrosion at the point, where the casing passed through the Oswego lime, which is found in that field about 400 feet above the Bartlesville sand.

The condition of the casing, oil lead line, jacks, powers, tankage and lease dwellings made it necessary that a program of complete renovation of the surface equipment as well as the casing would need to be carried out, and that the cost of this renovation would largely determine whether or not the properties could be operated at a profit even with an increased production.

The "east extension" of the project was to receive first consideration, principally because these properties were in a little better condition, and that the compressor station had been located somewhat nearer the center of this division than that of the "west extension."

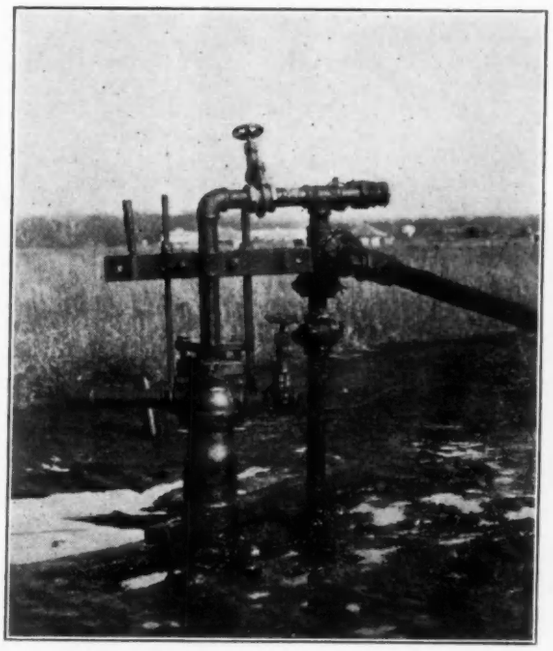
The compression plant having been completed, housing in the engine room seven twin 225 horsepower Miller gas engines. The low side of the engines was equipped with 16-inch by 24-inch low pressure cylinders with which to draw the gas from the casing heads. The high side was equipped with 8-inch by 24-inch cylinders to deliver the gas to the field for input purposes.

Vacuum Lines Arranged

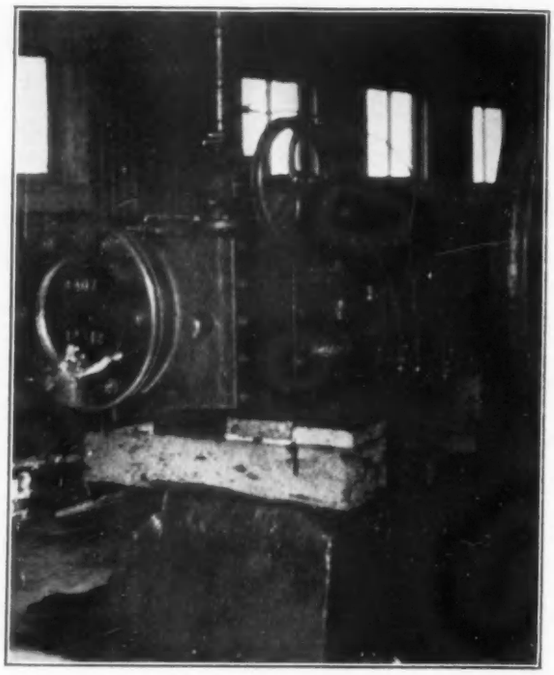
The vacuum lines which had been used by the two gasoline plants were arranged when so located, and replaced with good condition pipe where relaying became necessary, that they could be utilized in the system of the new plant to serve the field to the best advantage. The return residue lines were salvaged where they were in condition to be taken up, and relaid in a new distributing system.

The "east extension" was being prepared for gas injection by first selecting a few wells for input purposes which were connected to the high pressure return lines laid over this part of the field. The sand was relieved of the vacuum by simply opening the casingheads of all the wells in that division, permitting equilibrium to be established between the sand and the atmosphere in the shortest possible time. The inrushing air drove the oil, to some extent, from the wells which were pumping, and the production dropped in that area to almost nothing in a very short period of time.

The casingheads were then reconnected to the gathering system, carrying as near as could be accomplished, a pressure near atmospheric. The mixture of air/gas from these wells with the casinghead gas from the "west extension" was used as a medium with which to effect filling of the



No. 5, which flows under 190 pounds pressure, produces 10 barrels of oil in two hours. Opened twice weekly



Old steam engine used in power houses compressed air instead of steam is used to operate these engines

depleted sand reservoir with pressure, and also for fuel in the engine room. The reduced volume of available gas made progress quite slow in building a pressure on the sand.

Meanwhile the renovation program was being carried on. A beginning was made on the wells that showed signs of the water breaking in. The method that had been followed to some extent in that field in the reclamation of the wells that indicated the breaking in of the corrosive Oswego water, was to rig up a machine and pull the complete string of pipe, leaving the hole open and unprotected while the corroded joints were replaced with second-hand casing in good condition. This was a very unsatisfactory method, because even with the most careful handling of the wells, about 25 per cent of them were lost ascribable to caving of the walls or to the inability of the crew to effect the landing of rerun casing to the original seat.

Novel Method Devised

The cost of reclaiming the wells in this manner would average between $800 and $1000 each, and this excessive cost indicated plainly that some method which could be much more economically used in well reclamation must be developed. After considering the situation from its various angles and making a few experiments, a quite novel method was developed to clean the holes and to reclaim the wells.

Three of the twin Millers were connected for suction to the atmosphere, and lines were laid over the field carrying air at 300 pounds pressure. A high pressure air hose was attached to a lateral line leading from the high pressure air main to the well which was selected to be cleaned. Tubing was inserted into the well about to be reclaimed, and when it reached the obstruction, or the bottom of the hole, the hose was connected to the top of the tubing. The control gate was then opened permitting the high pressure air to flow down the tubing which upon striking the bottom, returned to the surface bringing all the loose sand and accumulated debris with it.

After the experiments had been made from which this method had been developed, the company purchased four-inch discarded drill pipe and some high pressure cracking tubes, had the ends prepared by cutting off the old threads in the case of the drill pipe, and smoothed the ends of the cracking tubes, run new threads on the joints with new collars.

A full string of this heavy pipe was run to the bottom of the hole with one or two perforated joints on the bottom. A burlap packer was so placed that when the string was picked up, it would close the hole at the top of the cavity produced by the old glycerin shot. The 6¼-inch casing in the well was then loosened. A neat cement mix was then poured down on top of the burlap packer and allowed to set. After sufficient time had elapsed that there was no danger of breaking the cement seal above the packer, the six-inch was pulled, meanwhile mud was run in behind the heavy string of pipe filling the hole to the surface.

Three Crews Employed

After demonstrating the successful performance of this method of reclaiming wells, the company put three reclamation crews in the field working continuously. Up to the first of January, 1930, 247 wells had been recased in that manner without the loss of a single well. As compared to the cost of between $800 and $1000 in reclaiming the wells in the old manner and losing about 25 per cent of them, this method which is now being used, costs under $350 per well, and no losses are suffered. The total amount which would have to have been expended in the reclamation of the above number of wells salvaged in the old manner would be approximately $222,300, while the new method shows a cost for the 247 wells of $86,450, a difference on the books of the company of a saving of $135,850.

On top of that economical method of cleaning and recasing a reclaimed well, there is an average of from 600 to 700 feet of pipe salvaged from the hole which has been used to extend the field gathering lines or sold when an accumulation occured.

Another phase of the successful performance of the small diameter pipe used, is being demonstrated. If and when a string of tubing is dropped, it does not corkscrew or break within the confining limits of the small pipe. There have been quite a number of strings dropped in the reclaimed hole without a case of damaged tubing. The operating crew when fishing for the lost pipe do not have much trouble in getting hold of it with a socket.

Repressuring Gradually Applied

During all this time repressuring was being gradually applied to the field. The low volume of available gas from the casingheads of the wells prevented building up a satisfactory reservoir pressure without the aid of outside gas. There being none available, air was introduced in small quantities.

The additional wells selected for input purposes were prepared by first cleaning them out with compressed air in the same manner as those that were cleaned when recased with small pipe. After cleaning thoroughly, a string of heavy tubing was run down into the shot hole with a burlap packer set in the same fashion as that set with the four-inch drill pipe. The casing was pulled loose from its seat and cement was run on top of the burlap forming a permanent seal for the input tubing. After the well was tested for leaks and the cement had set, mud was run in surrounding the tubing and the casing removed.

There are no elaborate connections provided for these wells: simply a two-inch line is laid from the distributing system and tied to the top of the tubing with a swing con-

nection. Orifice flanges have been installed in the repressuring lines, but no meters have been installed, consequently the input volume is checked occasionally with a manometer reading, and the flow regulated by gates so that each well receives approximately 90,000 cubic feet of gas/air mixture. Up to the first of January, 1931, there had been 49 of these input wells prepared in this manner and put into operation. No failures to perform under these conditions have been found on any of the properties.

The new company found that early in the operation of the powers on the various properties would need extensive repairs, or should be replaced with new ones. The band wheels and surface rods were easily repaired, but the gas engines were worn to such an extent that expensive replacements would be necessary to place them in good operable condition.

Experiment Tried

Having a trunk line carrying compressed air under high pressure, an experiment was carried out by using an ordinary 12 by 12 steam drilling engine to replace one of the gas engines. After a few months time the economy of this compressed air operated steam engine proved its superiority over the gas engine operated power. Having an opportunity to buy up a quantity of reconditioned steam engines, they were purchased at a delivered price of $75.00 each. The gas engines were removed from their foundations and the steam engines installed in their places. Finding a buyer for the discarded gas engines, a sale was made which almost paid for the steam engines and setting them. The net cost of replacement was in the neighborhood of $2,000.00 more than that received from the sale of the gas engines.

It has been impractical to compute the exact amount of compressed air which the steam engines use due to the irregular service of the powers, but a number of individual tests which were carried out enabled the management to estimate that they consumed approximately 500,000 cubic feet per day. One of the Millers was set aside to furnish air with which these engines are operated, using as estimated only about two-thirds of its capacity in this work.

Power Cost Small

The cost of the engine which is about $12,000.00 set on the foundation, plus $2,000.00 which was expended for the reconditioned steam engines above that which was received for the original gas engines, represents an investment of $14,000.00 for pumping power. To replace the original 33 gas engines with new ones would have required an outlay of money of approximately $1,200.00 each or a total for the project of about $40,000.00.

The air is led to these air operated steam engines through the lines laid for cleaning out the wells. A piece of six-inch pipe is placed near the engine room at the power set at an angle of about 45 degrees from the perpendicular with the lower end sealed with an orange peel head. The upper end is swaged down to two-inch. The air enters about two feet from the lower end, passing through oil which is maintained at a level about four feet from the lower end. This apparatus serves as a scrubber for the air, cleaning it of the rust and scale coming from the high pressure air line. The air leaves the upper part of the scrubber entering the engine room, and after entering it the air is led through a coil made of two-inch pipe placed in an old discarded oil drum, leaving it to the throttle of the engine. During cold weather, a fire is lighted in the drum, heating the air in order that frosting in the cylinder due to expansion is eliminated. The heated air also permits the use of low grade engine oil in place of low temperature refrigerating machinery lubricant which would have to be used if the temperature within the cylinder was allowed to remain low.

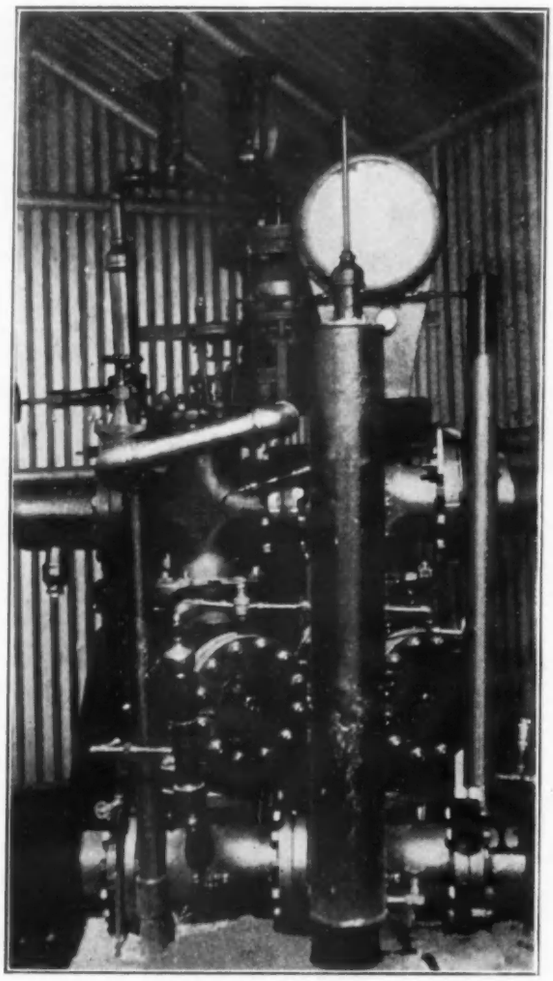
In addition to the saving in capital investment, the ease in starting the steam engine has permitted the company to reduce the pumping personnel to five men. The writer observed a pumper while starting one of the powers, and it seemed a lot easier than kicking on a cold gas engine for an hour or two. He merely opened the throttle, and after the engine started, he regulated the speed of it to conform to his regular pumping strokes.

Develop "West Extension"

In the first part of 1927 the "west extension" of the pool was begun to be developed, using the same procedure as that applied to the "east extension." A trunk distributing line was laid to serve this field, and as there was a scarcity of casinghead gas with which pressure could be applied, the three millers which had been connected to the atmosphere to furnish compressed air in cleaning out the wells and to furnish power with which to operate the steam engines, were also utilized to furnish air to augment the small volume of casinghead gas from the wells.

A pulsation controller was devised operated by a Foxboro volume controller which through the actuating

Explosion preventer on discharge of compressor, Delaware Consolidated Oil Company



Gas and Air Pulsation controller, Delaware Consolidated Oil Company

medium of low pressure air opens and closes the valves in the apparatus at stated intervals which may be varied to suit conditions and requirements. The discharge lines leading from those engines compressing the gas/air mixture from the casingheads, and the lines leading from the engines compressing air only are tied into this pulsation controller in such a manner that the flow of gas/air and air are kept separated.

The machine is automatic in its operation, and through it the gas-free air is directed to the field for input purposes through, for instance, the line leading to the "west extension," while the gas/air mixture is being pumped to the wells in the "east extension." When the machine pulsates, or changes the direction of flow, the air is instantly and automatically changed from the "west extension" to the lines leading to the wells in the east side. The gas/air mixture is changed at the same time from the east side to the wells in the west. With this machine operating there is a minimum of danger in transmission line explosion.

Some Wells Flow

The sand has been filled with pressure to such an extent that some of the wells may be caused to flow. One well in particular, Claude Robbins No. 5, SE NE SW SW, 23-27-15, has been permitted to produce by flowing for some time. It is opened twice each week for a two-hour period, making during that interval 10 barrels of oil into the receiving tank. The sand pressure at this well has averaged about 180 pounds for over a year.

Two pounds back pressure is maintained on the regulator at the intake header of the engines, placing a back pressure on the entire field. If, as in the case of the above well, the gas has found a channel from an input well directly to one of the producing wells with a tight streak between it and the other producers, the output volume is controlled at the tubing or casinghead by pinching the flow with a gate or common stop.

To accomplish added economies, several features have been installed in the engine room which makes it almost automatic in operation. The seven Millers are operated by only one man, who attends to the oiling and necessary adjustments during the daylight period of operation.

Water is secured from California Creek upon whose banks the engine room is built. A well has been excavated near the side of the channel, with a flume leading from the current of water to it. In this excavation there has been installed an air operated water jet with sufficient lifting capacity to furnish all the water necessary in cooling the power and compressor end of the engines, as well as a sufficient amount to cool the gas and air in the inter and final coolers.

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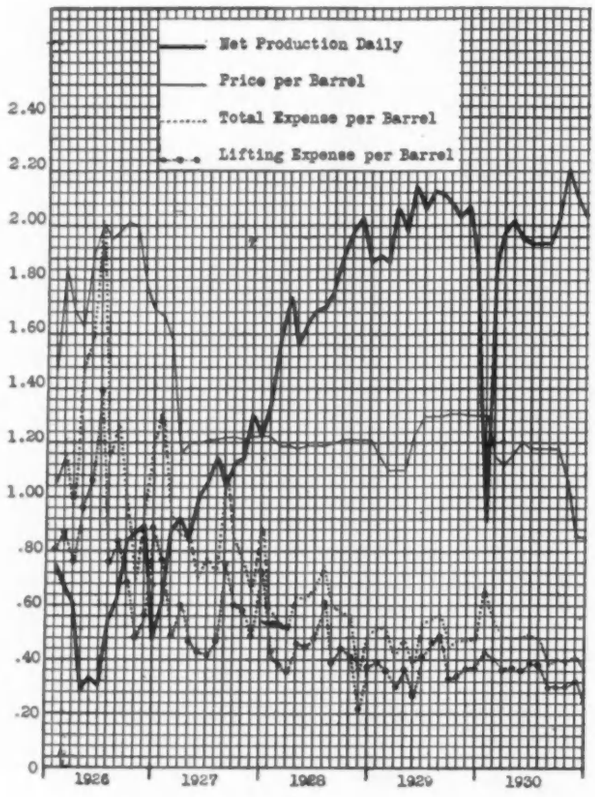


cooling is effected by gravitation from this wood tank over the engine jackets and atmospheric gas and air coolers. If through failure of the jet to furnish sufficient water to continue safe operation the engines automatically shut down. A float has been installed in this 1600-barrel tank, with connections to all the circuit breakers of the magnetos on the engines. When the water level has reached the danger point, the float, by lowering, brings the cable connected to the engines taut, opening the circuit breakers and stopping the engines before sufficient heat has been generated to cause damage to the equipment.

Safety Precautions Taken

As air and gas are both being compressed to maintain pressure on the field, some danger may be experienced in combustion occurring in the discharge lines leading from the high pressure cylinders. An automatic combination flame quencher and circuit breaking device is installed in the tee just out from the discharge stool of the compressor cylinder. It is constructed from a piece of 6-inch casing about six feet in length. In a specially milled recess in the lower part of it where it is swaged to four-inch, there is placed an automatic valve held in position by a fusible plug which will melt instantly at very low temperature. This valve supports the chamber filled with water, and if there is generated enough temperature approximating that accompanying an explosion or flame, the plug gives way, lubricating the water into the discharge line, which will tend to quench the flame. At the same time a float placed in a two-inch side connection is attached to a circuit breaker, which lowers as the water discharges, stopping the engine at once.

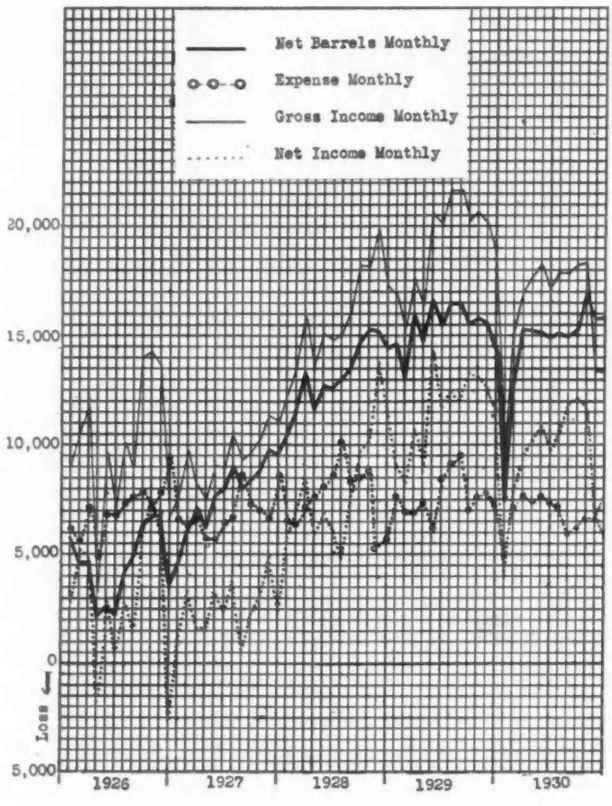
In the supply tank which contains the circulating lubricating oil for the crank and main bearings, is placed another float which is connected to the circuit breaker. If, during the unattended period of operation, the oil is prevented from returning to the container, or the lines break, the float naturally lowers to a point above the danger line, opening the circuit and automatically shutting the engine down.

Economies Practiced

Through practice of the economies outlined by the management, the properties as a whole have made a very good showing. From a production of about 5500 barrels per month at the time repressuring and renovation was started, the properties have been made to produce 15,763 barrels net in December, 1930, an increase of almost 300 per cent.

Below is outlined the unit barrel expense based on an average daily production month by month for 1930, covering the consolidated area:

1930	Daily Average Net Prod.	Price	Net Income	Total Expense	Lifting Expense	General Expense	Tax
January	226	$1.30	$0.64	$0.66	$0.43	$0.20	$0.03
February	462	1.15	.61	.54	.40	.11	.03
March	493	1.11	.62	.49	.36	.10	.03
April	507	1.15	.67	.48	.37	.08	.03
May	489	1.20	.72	.48	.36	.09	.03
June	483	1.18	.69	.49	.38	.08	.03
July	483	1.18	.71	.47	.37	.07	.03
August	483	1.18	.80	.38	.29	.06	.03
September	509	1.18	.78	.40	.30	.06	.04
October	550	1.06	.67	.39	.30	.05	.04
November	525	.85	.43	.42	.32	.07	.03
December	509	.85	.49	.36	.24	.09	.03



Opportunity for Profit In Shallow Drilling

RICHARD A. JONES
Geologist

THE majority of the large oil fields of recent years have been discovered at considerable depths. The East Texas field is at 3600 feet. Many West Texas fields were around 4000 feet. The Oklahoma City pool is below 6000 feet. It is true that one phenomenal field, the Yates pool of West Texas, furnished great flowing wells frow shallow depths. Nonetheless, depth and oil production have become more or less synonymous.

Owing to this idea, the search for shallow oil has abated and there is at present a tendency to overlook or to disregard shallow fields. The large companies especially do not seem to be interested in shallow fields. Very likely, from their viewpoint, they are right, since the greater part of the flush oil does come from deep wells. A company with large resources may not wish to operate shallow wells of small production, when the "big oil" can be found by deep drilling.

However, shallow oil offers opportunities to operators with small capital. The present time, when the emphasis is upon deep drilling, would appear to be a favorable moment to investigate the shallow oil that is being disregarded by so many. In the following paragraphs is described one of the most interesting shallow fields of Southwest Texas—the Dobrowolski[1] pool of Bexar County.

Location and Discovery

This field is about 10 miles southeast of the business district of San Antonio. It is, however, only five miles southeast of the southern part of San Antonio, and three miles east of Brooks flying field.

The elevation of the field is between 500 and 600 feet above sea level. It is on the upper drainage of Calaveras Creek. The topography is gently rolling. Some of the land is cleared and cultivated, but other tracts are covered with a heavy chaparral growth.

The discovery well was F. H. Eckert's Dobrowolski 1, completed in 1927 or 1928, around 600 feet. A well drilled for water nearby had encountered an oil showing at about 300 feet. It was this showing that led Mr. Eckert to drill the initial producer of the field, which is near the northeast end of the pool.

Development and Production

Development has been slow. The drilling has been done by small operators, among them Gatlin Oil Company, F. H. Eckert, Swearingen Oil Company, Nic Morosis and Collins, Williams and Kelly, and Penn-Tex Oil Company. These operators, with a few others, hold most of the present proven acreage.

The pay sand is encountered at depths ranging from 570 feet to below 700 feet, depending on the position of the tests on the structure. There are six small gas well in the northeast end of the field. Some weeks ago Whipple et al's Gembler 1 was also completed as a gasser at 720 feet.

Discovery well of Dobrowolski pool, F. H. Eckert's Dobrowolski 1.

In the middle of October, 1931, there were about 55 producing oil wells in the field. The oil is run by Slimp Oil Company, which has a 2½-inch gathering line. This line goes to Southton and from there the oil is carried by pipe line to the refinery of the Slimp Oil Company at Somerset.

The gravity of the oil is 34.5 degrees. The color is brownish-green. Tests show four-tenths of one per cent of emulsion in the crude.

Daily production of the pool in October, 1931, was approximately 370 barrels from 55 wells, or between six and seven barrels per well. Some wells make better than the average, some less. In general, the wells at the south end of the pool are better than those at the north end. The initial production of wells averages about 10 barrels. Gatlin Oil Company's Beck 5 and 6 are said to be the best producers in the field. The majority of the wells pump off in a few hours, and throughout the pool the wells are pumped only four or five hours daily, two or three hours in the morning, and two or three hours in the afternoon or evening.

The Dobrowolski field trends almost northeast and

[1]The San Antonio Geological Society, which is attempting to establish a standardized series of names for Southwest Texas oil fields in order to prevent confusion in production and scout reports, has recently suggested that the name of the pool be changed to "Eckert" field, since the Polish word "Dobrowolski" is very difficult to spell or pronounce.

Some Recent Drilling Operations in Dobrowolski Field

Alamo Natural Gas Co.'s Gembler 3, completed, 10 barrels, one million gas, sand 708-716 feet.
Alamo Natural Gas Co.'s Gembler 4, drilling, 680 feet.
Gatlin Oil Co.'s Beck 10, completed, 10 barrels, sand approximately 700 feet.
Gatlin Oil Co.'s Beck 11, moving on.
Swearingen Oil Co.'s Halbardier 7, completed, 9 barrels.
Swearingen Oil Co.'s Halbardier 8, spudded.
Williams-Kelly Oil and Gas Co.'s Strunk 1, drilling.
Williams-Kelly Oil and Gas Co.'s Strunk 2, location.
F. H. Eckert's Brehm 1, location.
F. H. Eckert's Sandemer 9, preparing to drill.

southwest. It is at present almost two miles long, and averages about one-half mile in width. This makes one square mile or 640 acres so far proven by the drill. The limits of the pool are not yet defined and it may be extended by future drilling. In addition there remains undrilled acreage within the proven area.

Drilling and Operating Methods

An attempt was made to drill the shallow wells with spudding machines. This was not very successful on account of the sticky and "caving" shales and clays encountered. Rotary tools were found to be more practical.

The following description of drilling and operating methods on the Beck lease of Gatlin Oil Company in the south part of the field will give an excellent idea of how the shallow wells of the Dobrowolski pool are drilled and pumped. Mr. Leroy Gatlin is president of the Gatlin Oil Company. Mr. Ike W. Taylor is the contractor who has drilled all the wells on the Gatlin Oil Company lease and who is also field manager of the lease, supervising the pumping of the wells. The Gatlin Oil Company lease is one of the best operated leases in any shallow field anywhere. Both Mr. Gatlin and Mr. Taylor are to be congratulated on the efficient manner in which they are developing this lease.

Mr. Taylor has drilled the wells on the Gatlin lease with a small rotary outfit. A 60-foot Emsco steel derrick is used, being skidded from one location to another, as wells are completed. The rotary equipment is almost entirely of Lucey make—the pumps, draw-works, traveling blocks, and other parts being all those manufactured by the Lucey Company. Power is furnished by two Fordson tractors—one on the draw-works, one on the pumps.

A well is spudded with a 9¼-inch hole. No surface pipe is set. After spudding, the hole is drilled with three-inch National drill stem, carrying a nine-inch bit. Fish tail bits do most of the drilling. However, rock bits are employed on some hard boulders, which, from samples of the material, appear to be Midway limestone concretions.

Immediately above the oil sand on the Gatlin lease is a bed of gumbo 20 feet thick. Above this gumbo is a shell bed, likewise about 20 feet in thickness. Casing (6⅝-inch) is cemented in the gumbo, 10 feet below the base of the overlying shell bed. Ordinarily only six sacks of cement are used.

In putting the wells on the pump, two-inch tubing is used.

On the east side of the Gatling Oil Company lease, five wells[2] are pumped from a power house in which is installed a 12½ horsepower gas engine. The producers throughout the field do not paraffin up, and it is seldom necessary to pull rods or change cups.

The time required for completing a well on the Gatlin Oil Company lease, including installing pumping equipment, is about 14 days. The drilling time is around eight days, drilling entirely in daylight. About 100 feet per day is averaged when drilling. The chief operating difficulty is water. There are no water wells in the Dobrowolski field, and drilling water must either be piped from surface "tanks" and ponds, or hauled from water wells in adjacent areas.

[2]Since the writing of this article, Gatlin Oil Company has installed a new power house, from which nine wells are pumped.

Producing Sand

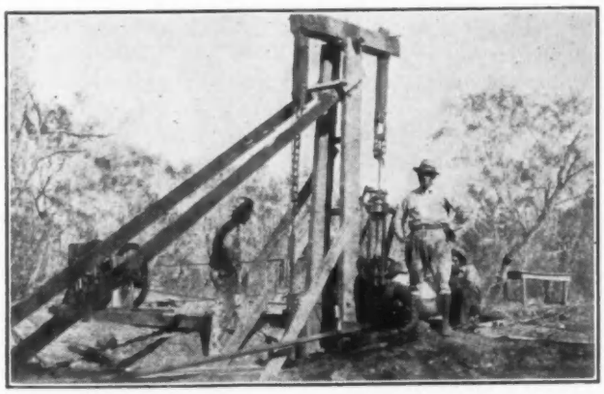
The oil sand of the Dobrowolski pool averages about 12 feet thick. On the Beck lease of Gatlin Oil Company, the pay sand is from 11 to 23 feet in thickness. This last thickness, which was encountered in Beck 5, is exceptional, and the well is the best in the field, being capable of pumping two barrels per hour for the entire 24 hours. In Beck 8, the pay sand was drilled entirely through, from 710 to 721 feet (11 feet of sand), and the bit stopped in gumbo.

The "Dobrowolski sand" is very fine-grained. To the naked eye it appears only as a powdery, rough grit on the fingers, containing many black specks. However, the writer examined samples from Gatlin Oil Company's Beck 8 under a powerful hand lens; and it was seen to be a real sand, composed of exceedingly fine, angular grains of white and gray quartz, with which are intermingled the small black particles previously mentioned and which may be chert grains.

Seldom does one find such a fine-grained sand capable of producing oil. The angular nature of the small quartz grains, however, no doubt affords the pore space in which petroleum is stored. The sand when drilled into and bailed, does not give a strong showing on the ditch. A large rotary rig, operating at high speed, making hole at top pressure, and carrying heavy mud, could easily mud off the oil in this sand and pass through the pay horizon without revealing its presence. The writer watched the bringing in of Gatlin Oil Company's Beck 8, and, despite the care which was taken in testing the sand, bailing showed scarcely any oil on the ditch for a long time. As the hole became almost clean, considerable oil mixed with mud appeared. The oil was exceptionally "live," small clouds of irridescent gas blowing off the bubbling petroleum. When the well was finally cleaned and ready for receiving tubing, 80 feet of clean oil were in the hole. The small showings made on the ditch by such a good shallow pay emphasize the need for constant care and watchfulness in drilling.

Geology and Structure

The formation at the surface at the Dobrowolski field is the Midway formation of Eocene age. The Midway, as



Rigging up Gatlin Oil Company's Beck 7, Dobrowolski field, for pumping. Left, Win Riddle. Right foreground, Ike W. Taylor, drilling contractor and field superintendent for Gatlin Oil Company.

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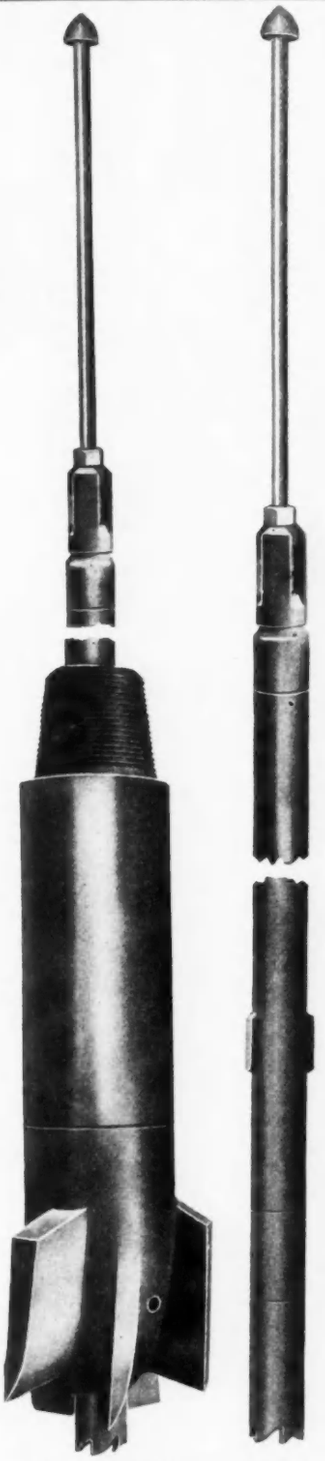

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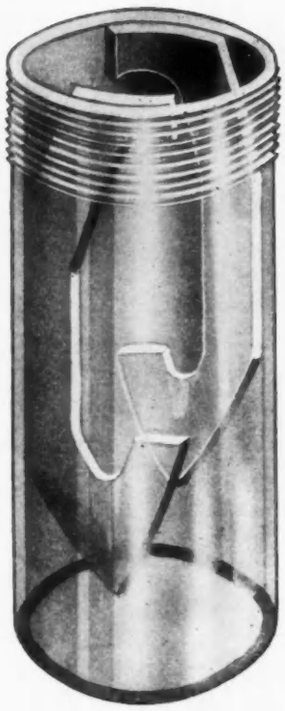

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OK-1

here exposed, consists of bluish shales, weathering yellow and buff, with which are interbedded layers of limestone concretions, brown and yellow in color, oval in shape, and often containing veins of calcite.

The northeast end of the pool is a short distance south of the east end of a large fault. The Dobrowolski field may be connected with the disturbances attending this fault. However, the field trends, as has been mentioned, almost due northeast and southwest, much more northeasterly

An exposure of folding in the Midway formation near the Dobrowolski field, Bexar County, Southwest Texas.

than the large fault noted above; nor is the pool by any means directly on this fault.

Subsurface structure maps, contoured on the top of the Dobrowolski pay sand, reveal a series of northeasterly trending step faults, downthrown on the northwest and upthrown on the southeast. One of these small faults is shown as having a displacement of 80 feet. Another has 30 feet of displacement. Oil is found on both the upthrow and downthrow sides of the faults. The dip in the central part of the field is about 200 feet to the mile.

The highest subsurface structural elevation in the field is said to be 20 feet below sea level. In the northeast end of the pool subsurface maps show the pay sand at 50 feet below sea level, and dipping to the southeast. Wildcat wells 1½ miles south of the southeast end of the field find the Dobrowolski sand at 520 feet below sea level. In the present developed area oil has been produced between the minus 20 and the minus 160-foot contours.

The oil of the Dobrowolski field comes from the Navarro formation of the Upper Cretaceous. Shells of Navarro age have been determined in samples from some of the fossil beds noted in the log given above. Throughout Bexar County a widespread subsurface marker is a green sand occurring in the Navarro series. In Gatlin Oil Company's Beck 9, from the depth of 315 feet, was recovered a bit sample of vivid green, fine-grained, clayey sand, containing numerous small, dark particles of glauconite or phosphate, probably the Navarro green sand horizon.

Log of Typical Dobrowolski Shallow Well

The character of the rocks penetrated in the shallow wells of the Dobrowolski field may be seen from the following log, that of Gatlin Oil Company's Beck 7:

	Bottom Feet	
Surface clay	30	
Shale	120	
Shale	220	
Hard rock	221	
Sandy shale	353	
Hard rock	354	
Shale	357	
Hard rock	358	
Shale	394	
Hard shell beds	402	
Shale	418	
Hard rock	419	
Shale	429	
Hard shells	431	(Show of gas)
Shale	604	
Fossil bed	607	
Shale	665	
Fossil bed	690	(Main fossil bed)
Sticky shale	706	
Shale	707	
Gumbo	709	
Shale	711	
Gumbo	714	
Oil sand, "Dobrowolski sand"	725	—(11 ft. thick)
Gumbo	726	TD. (No water)

High-Grade Shallow Field

The Dobrowolski pool is one of various shallow fields in Bexar County, among the others being the large Somerset field, the Southton and Yturri pools, and a field discovered in 1930 some miles east of the Dobrowolski area and known as the Penn or Witherspoon unitized pool. However, most of the shallow oil in Bexar County has come from the Taylor marl, as at Somerset. The Dobrowolski field derives its production from younger beds, the oil sand, as has been noted, being in the Navarro series, the Upper Cretaceous formation immediately above the Taylor marl.

The expense of drilling the shallow wells of the Dobrowolski pool is small. The oil is of high-grade and has commanded a good price.

A point not to be overlooked in the development of the Dobrowolski field is the chance of deeper horizons beneath the present pay in the Navarro formation. As has been mentioned, the greater part of the shallow oil in Bexar County has been produced from the Taylor marl. To date no tests in the Dobrowolski field have been carried into

A pumping well on lease of Gatlin Oil Company, Dobrowolski field.

the Taylor marl,[3] and the chances for Taylor marl production beneath the present pay sand appear promising; nor has the Edwards limestone been tested in the Dobrowolski field. The pool offers three favorable prospects of production beneath the Navarro producing sand—the Taylor marl, the Austin chalk, and the Edwards limestone.

[3]Since completion of this article, Alamo Natural Gas Company's Gembler 3, which was completed as an oil well with a large amount of gas recently, is said to be drilling deeper, being early in March reported as drilling at 1093 feet

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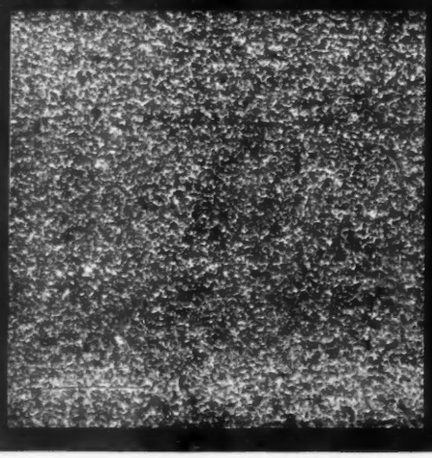
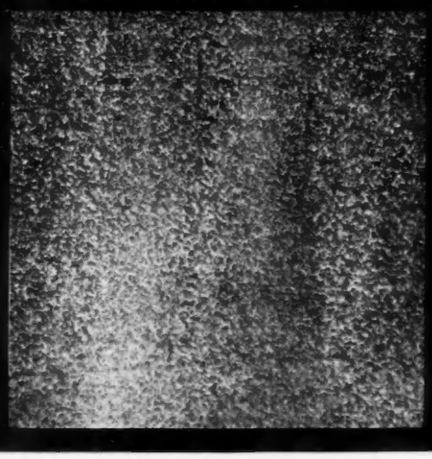
SHOWING TYPICAL STRUCTURE OF REPUBLIC ELECTRIC WELD PIPE WALL



SAME PIPE AS AT LEFT, SHOWING TYPICAL STRUCTURE AT THE WELD



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So forget that there is such a thing as a weld in Republic Electric Weld Pipe. Actually it is there, but for all calculations, the strength of the weld may be considered as the strength of the wall—this by no less an authority than the U. S. Bureau of Standards.

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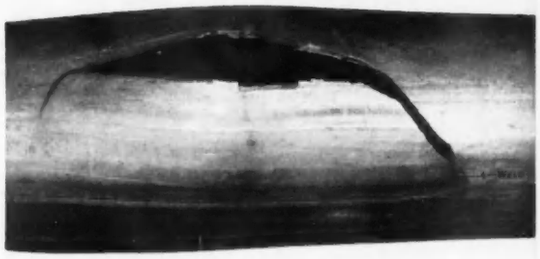
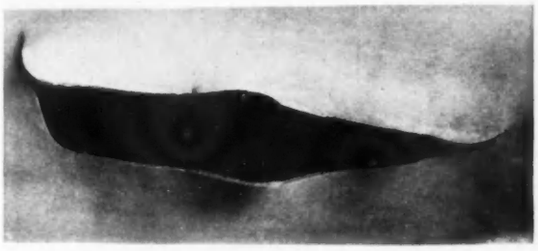
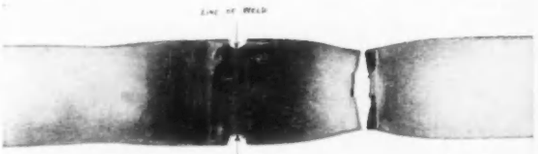


Pittsburgh Testing Laboratory test. Bursting Pressure 4,200 lbs. per sq. in. Rupture occurred away from weld.

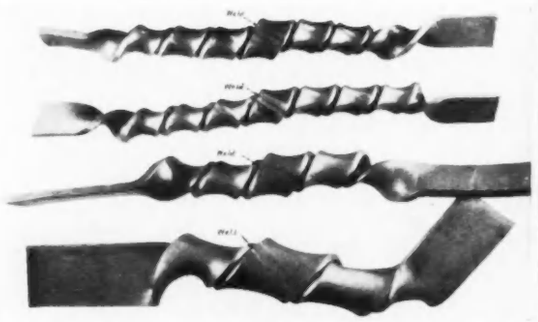


Moody Engineering Company test. Bursting Pressure 3,730 lbs. per sq. in. Rupture occurred 180° from weld.



Tensile test with ¼" diameter notch at weld.

Ductility (twist) tests on electric weld pipe with weld longitudinal through center.



Ductility (twist) tests on electric weld pipe with weld at right angles to axis of test strip.

Vanstoning quality of electric weld pipe.

Ductility (expansion) test on electric weld pipe.

Working Program for A. P. I. Mid-Year Session Outlined

NEW YORK.

TECHNICAL advances as well as practical achievements in the fields of producing, refining, and marketing of petroleum and its products will be reviewed when the American Petroleum Institute meets at Tulsa on June 1, 2 and 3 in mid-year assembly of the three divisions of the organization. Tentative outline of the program that has been announced calls for division and committee meetings morning, afternoon, and evening on Wednesday, Thursday and Friday. The Board of Directors of the Institute will hold a session on the opening day, and the afternoon of that day will be given over to a general session of the Divisions of Production, Refining and Marketing.

At that general session, President Amos L. Beaty, Charles F. Roeser, vice president for production, and Henry F. Long, commissioner of Corporations and Taxation of the Commonwealth of Massachusetts, will be the speakers, and reports will be made for the two committees that are working on forecasts of consumption demands for petroleum products for the nine months period April 1 to December 31. Dr. John W. Frey, chief petroleum economist of the Bureau of Foreign and Domestic Commerce, will report for the Federal Oil Conservation Board's committee of five, and Albert J. McIntosh (Standard Oil Company of New York) will report as chairman of the Institute's statistical sub-committee designated to make a statistical survey and economic forecast of the refining situation.

That sub-committee of nine members, working with Fred Van Covern of the Institute staff as secretary, will develop its survey in New York during May and will go into session in Tulsa on Monday morning, May 30, for a final check. The general committee on refinery statistics, with D. J. Moran as chairman, will meet Tuesday afternoon to receive the sub-committee report in advance of the meeting.

Committees to Meet

Thirty-five working committees of the three divisions of the Institute have been called to meet at the mid-year meeting to relieve as much as possible the burden of work at the annual meeting to be held next November in Houston.

The production division has scheduled as general topics production policies, drilling practices, and production practices.

Gasoline tax evasion and marketing problems are major topics for consideration of the marketing division.

Three general topics have been set down for consideration in the three sessions of the refining division, including utilization of petroleum gases, refining problems, and anti-knock rating of motor fuels.

On Production Program

On the production division program aer the following: Fred E. Wood, Standard Oil Company (Indiana); A. C. Rubel, Union Oil Company of California; Stanley Gill, Houston; A. H. Albrecht, Standard Oil Company of California; J. E. Eckel and D. B. Harris, Humble Oil & Refining Company; E. V. Foran, Texas Oil and Gas Conservation Association; H. D. Wilde, Jr., Humble Oil & Refining Company; L.

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With a few speakers yet to be announced, those on the program for the refining division program are: Alois Kremser, California; G. G. Brown, University of Michigan; G. G. Oberfell, Phillips Petroleum Company; J. B. Rather, Standard Oil Company of New York; William Mendius, Sinclair Refining Company; P. Dashiel, United Gas Improvement Company; T. G. Delbridge, The Atlantic Refining Company; G. L. Neely, Standard Oil Company of California; Ross C. Powell, The Texas Company; W. S. Gullette, Sinclair Refining Company, and T. A. Boyd, General Motors Corporation.

Those scheduled for appearance on the marketing program are: W. T. Holliday, Standard Oil Company (Ohio), chairman of the Division of Marketing; J. R. Atchison, Oklahoma Code Committee, and Burton W. Musser, of Ball, Musser and Mitchell. A general symposium on the gasoline tax evasion campaign will be held on Friday afternoon, and several speakers will be heard.

First South Dakota Refinery Begins Operations

Hot Springs, S. D.—This city is the location for a new refinery completed and now in operation on crude from the Osage field in Weston County, eastern Wyoming. The plant is three miles southwest of the city; it is owned by a syndicate composed of Osage field operators included being Orville Rinehart, C. L. Foster, and E. M. Wells. It is the first oil refinery in South Dakota.

Marshall, Texas.—Benedum & Trees' Bartha Tyler 1, William Holloway Survey, Marion County, topped the Georgetown lime during the last week, at 3600 feet even and on Thursday, April 28, was drilling in that formation at 3648 feet with plans to go to 3750 feet; elevation is 236 feet. Pecan Gap chalk was logged from 2214 to 2640 feet; the Austin Chalk from 3505 to 3546 feet and the Woodbine was contacted at 3565 feet.

A drill stem test from 3563 to 3580 feet was dry but another from 3575 to 3630 feet showed four fourbles of mud.

This test checked forty feet higher than a test drilled last year two miles to the north, in which a drill stem test in the Woodbine showed salt water.

Reservations Indicate Good Attendance at A. G. A. Meet

Tulsa. — Advance reservations indicate that more than 800 people will attend the convention of the natural gas department of the American Gas Association which will meet in Tulsa on May 9, 10, and 11, the program for which has been arranged as follows:

Monday Afternoon, May 9, 2:00 p. m.

Opening remarks—T. J. Strickler, chairman of the Natural Gas Department, American Gas Association.

Invocation—Dr. C. W. Kerr, First Presbyterian Church, Tulsa.

Address of Welcome—George Watkins, Mayor of Tulsa.

Address—E. A. Olsen, president Oklahoma Natural Gas Corporation, Tulsa.

Address of the chairman — T. J. Strickler, vice-president Kansas City Gas Company, Kansas City.

Address—R. W. Gallagher, president American Gas Association.

Address—Alexander Forward, managing director American Gas Association, New York.

"This Changing World" — Walter W. Ferguson, vice-president, Exchange National Bank, Tulsa.

Informal addresses by gas company executives.

Tuesday Morning, May 10, 9:30 a. m.

"Dealer Cooperation, the Need and Justification for Utility Selling"—Leroy M. Edwards, general counsel, Southern Counties Gas Company, Los Angeles.

Discussion.

"Dealer Cooperation by Affiliated Associations"—A. E. Bettis, president Missouri Association of Public Utilities, Kansas City.

Report of Main Technical and Research Committee and Sub-committees —H. C. Cooper, chief engineer Hope Natural Gas Company, Pittsburgh.

Discussion.

"Developing New Uses for Gas and the Need for Such Accomplishment"—Henry O. Loebell, vice president Combustion Utilities Company, New York.

Tuesday Afternoon, May 10, 2:00 p. m.

"General Conditions in the Industry" —E. B. Reeser, president Barnsdall Oil Corporation, Tulsa.

"Rate Legislation and Taxes"—Judge H. O. Caster, Henry L. Doherty and Company, New York.

Discussion.

"Large Diameter Transmission Lines"—E. F. Schmidt, general superintendent Lone Star Gas Company, Dallas.

Discussion.

"Water Vapor in Natural Gas"—C. H. M. Burnham, chief engineer Colorado-Wyoming Gas Company, Denver.

Discussion.

Wednesday Morning, May 11, 9:30 a. m.

"Wrinkles"—H. J. Hoover, Natural Gas, Cincinnati, Ohio.

Report of Committee on Supply Men's Fund—J. B. Tomkin, vice-president, Peoples Natural Gas Company, Pittsburgh.

"Latest Developments in Production" —H. A. Wallace, United Fuel Gas Company, Charleston, West Virginia.

Discussion.

"Conservation of Gas in Completion of Well Drilling and Gas Well Deliveries"—N. C. McGowen, president, United Gas Public Service Company, Houston, and E. L. Rawlins, natural gas engineer, United States Bureau of Mines, Bartlesville.

"General Utilities Situation"—J. F. Owens, president National Electric Light Association, Oklahoma City.

Motion picture of famous Moreni well fire—M. M. Kinley, Kinley Brothers, Tulsa.

Wednesday Afternoon, May 11, 2 p. m.

"Major Future Sales Problems"—Samuel Insull, Jr., vice chairman, Middle West Utilities Company, Chicago.

Question Box and Discussion—J. D. Creveling, Henry L. Doherty and Company, New York.

Several entertainment features are planned, among which will be an informal dance Monday evening and a cabaret dinner and dance Tuesday evening at the Mayo Hotel. A bridge luncheon for the ladies will be held Tuesday afternoon and a wrestling match Monday evening. Following the meeting a tour will be made of the Oklahoma Natural Gas System which includes 3000 miles of pipe line drawing gas from approximately 1000 wells in 45 fields and serving 60 communities.

The Fable of
The Rival Truckers

THERE were once two draymen, with one-horse rigs, who served the same community. They met all trains, fought for trunks, and raced each other for the favorite "stands." ¶ They were hustlers, and business grew for each. One of them put on another horse. ¶ To save expense—the other one drove his one horse farther and faster. The foolish one made his deliveries, but he killed his horse.

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CALIFORNIA FIELDS

Middle Dome Completion Shut in for Connections Resume Work on Tidelands At Elwood.

BRAD MILLS, ***Staff Representative, Los Angeles, California***

Dominguez Drilling Has Been Quiet But Effective

Los Angeles.—There is little in the day-to-day drilling program at Dominguez to indicate that the field is a decided factor in Los Angeles basin production, but the steady development of the past seven or eight months has accounted for a long string of good completions which were finished with a minimum of fuss.

Union Oil Company, principal operator, has established a good record in the lower Callender zone, having completed upward of a dozen wells as good producers. Shell Oil Company recently completed four wells, after getting away to a very slow start. Union Oil Company will soon complete three more wells. This company has completed its lower Callender zone wells with an average expenditure far below that for the same depth in most fields, and has also set a speed record which will be difficult to equal.

Some of the best leases were made for a period of only 20 years, and upward of one-half of this time has expired. Outright abandonment will be necessary on a few of the leases. The landowners are pushing the operating companies to develop their holdings, but it is known that the operators themselves are anxious to make the most of their leases. Where they are caught on a 20-year clause, they feel that it is necessary to protect their own interests.

Middle Dome Producer Shut in Without Gauging

Coalinga, Calif.—The short production test of Standard Oil Company's No. 6-29V, Middle Dome well, was one of the outstanding developments of the week, even if the flow was shut in before much was learned of the size of the producer. The well was drilled to 7885 feet and a 4¼-inch flow string landed at 7513 feet. After circulating a short time, the flow of mud and water started at a good rate. The well cleaned up in a surprisingly short time, but was shut in as soon as the first oil appeared. The tubing pressure increased to 2430 pounds and the casing pressure jumped to 1700 pounds.

The well was shut in to await proper pipe line connections, but not before it had demonstrated a good punch. The prediction was made some time ago that this well might be the first commercial completion, and there is now more reason than ever to hold to the belief. The company had the advantage of the experience with Petroleum Securities Company's Burbank 1 and was able to make better decisions as to cementing and testing levels.

North American Oil Consolidated is fishing for a core barrel at 9222 feet in Elsinore 1, an edge test on the North Dome, after drilling through a gray sand which showed little oil. This important well seems to be near the edge of the field and should help to define the producing limits of the North Dome.

Venture County Promises Important Reserves

Santa Paula, Calif.—Drilling of a second well in the Hopper Canyon district by H. A. Bardeen bears out the prediction that certain areas producing heavy oil in Ventura County may be developed as the demand for oil improves. This immediate district, however, does not produce a heavy oil, the first Bardeen completion having yielded a 33.2 gravity crude. An absorption plant was recently completed to handle the gas, and this added facility may encourage development.

There are perhaps 40 small districts in Ventura County which produce oil in varying quantities. Most of these areas have been quiet for years. Drilling in the future will be slow, and only a genuine demand for all grades of oil will warrant extensive operations. Several companies have added to their leases in the more promising of these districts, and the prospects of good pumping wells at greater depths than the former completion levels have offered some encouragement.

Resume Work on Three Tideland Tests at Elwood

Santa Barbara, Calif.—After an almost complete shut-down of more than six months, work has been started on three tideland wells in the Elwood field. Barnsdall Oil Company and Rio Grande Oil Company, joint operators, are building rig to drill State Permit 88-8. Pacific Western Oil Company has again started work on State Permit 92-9 and is completing rig for the test. Caroline C. Spalding has made location to drill State Permit 93-6, an offset to No. 92-9.

The significance of this move has not been determined, but it is doubtful whether another drilling campaign to the Vaqueros is in the making. This shallow zone has been largely depleted in the developed sections through development which certainly did the field no good. As far as is known all of the present development is headed for the Vaqueros zone, or the upper producing body. The Sespe zone was proved productive by Barnsdall Oil Company, but the discovery was shut in at 4396 feet after flowing at a 2800-barrel rate.

Production was nearly doubled two years ago when the State of California granted permits to drill tideland leases in the Pacific Ocean.

Plan Second Ocean Test Off Coal Oil Point

Santa Barbara, Calif.—Another well will be drilled in the ocean off Coal Oil Point by Bolsa Chica Oil Corporation, the tentative location having been made about half way between the mean high tide line and the first test at the end of the pier.

The first well was drilled more than a year ago and the location was made after the geology of the submarine structure had been done with boats and divers. A heavy pressure was developed below 4000 feet in the first test, but too much formation was evidently opened, and on a production test above the plug at 4150 feet more water than oil was produced. After several unsuccessful production tests at 4150 feet, the well was deepened to around 5500 feet and abandoned.

The first geological report was favorable, but it was later found that the first location was not on top of the structure. The mapping of this structure was one of the geological achievements of two years ago. The work was done under the direction of J. E. Eaton.

Ready for Production Test In Deep Button Willow Hole

Bakersfield, Calif.—The value of the Buttonwillow district as a gas producer has been recognized, but drilling at almost any depth over a wide area offers many problems. Efforts to develop deep production were made some time ago, but heaving shale was handled only with much difficulty. Even the shallow gas zones are developed with some difficulty. It requires only a few days to reach the shallow gas zone above 3000 feet, but a powdery shale filters through the perforated pipe which is designed to meet average gas conditions. Mudding off of these shale streaks has been accomplished in several wells.

General Petroleum Corporation, Milham Exploration Company and Wilshire Oil

Company are now active in the district. Milham Exploration Company has developed a large gas production over a long period. Wilshire Oil Company is cleaning out above the plug at 4650 feet in Salisbury 1, a deep test which was drilled some time ago to 6990 feet. A production test will be made. Much of the hole below 5000 feet was drilled in the face of a caving and heaving formation which hindered progress.

Deal Pending on Timber Canyon Properties

Santa Paula, Calif.—Superior Oil Company is considering acquisition of San Pedro-Point Fermin Oil Company's holdings on Section 13-4-21, in the Timber Canyon district, but no definite announcement has been made. The lease is located in one of many shallow producing districts and has one producing well which was completed with a good initial yield. Superior Oil Company has been successful in the drilling of leases which were regarded as difficult to develop.

Rio Grande Plans Wildcat Test in Shale Hills Area

Bakersfield, Calif. — Rio Grande Oil Company will drill a wildcat well on Section 7-27-19, about 11 miles south of the Devil's Den district and in the Shale Hills area, after leasing nearly 4000 acres, most of which is permit land. The Shale Hills district has been extensively drilled, but most of the tests were shallow and could not be regarded as definite proof that further drilling was not warranted.

Most of the wells were drilled on the theory that shallow production was the most reasonable to expect, while two or three were little more than validation holes. Standard Oil Company drilled to 4050 feet a short distance to the east, but even this depth is not now regarded as a barrier to production.

The Shale Hills lie along the fringe of the San Joaquin valley and their appearance have attracted operators for a long time.

Los Angeles Basin Still Has Wildcat Possibilities

Los Angeles.—The Los Angeles basin, particularly districts which offer some chance of an extension to proven fields, is not so well drilled that it will not see action in the future. Leasing of attractive acreage near fields and where faulted conditions add to the possibilities has given the operator who believes in the future a chance to make plans for the usual wildcatting operations.

A short distance southwest of the Athens-Rosecrans field, recent leasing has led to a definite decision to drill at least one well. J. J. Stevens et al will drill south of the fault in an effort to extend production. About 400 acres have been leased and there is good geology to support the move. Athens-Rosecrans produces a light oil which refines well. It is a narrow field and has not been as productive as some of the others between Newport Beach and Beverly Hills.

Several wells are being drilled in the extreme edges of proven fields and might be classed as semi-wildcats. Most Los Angeles basin fields are well defined and have not been extended with ease, but faulted conditions in and near a few fields indicates that further development is possible.

Fruitvale Offsets Forced By Smaller Operators

Bakersfield, Calif. — Although activity at Fruitvale has been termed unnecessary, most of the offsets have been forced by the action of one or two small operators who were anxious to deevlop their holdings. The extension on the northeast flank seemed to remind some of the smaller operators that they should drill small leases at once, and the activity spread to the larger leases. The oil is not in keen demand and there seems to be little reason for completion of a dozen wells.

Western Gulf Oil Company, principal operator and discoverer of the field, recently completed three wells and is drilling another. This company was opposed to resumption of operations at this time, but was forced into action through the necessity for offsets.

The oil sand has not proved uniformly productive, and the decline of different wells has been radically different. The producing zone is thicker in some sections than in others, but the difference in the action of wells close together may be attributed to mechanical inconsistencies, rather than to a sudden change in the nature of the formation. Some of the older completions suggest a spotted condition, and connection with the Kern Front field may be closer than originally thought.

Plan Deepening a Few Wells at Playa del Rey

Los Angeles. — Deepening of several wells to the schist at Playa del Rey may increase drilling in this field, but there is little likelihood of a general resumption of operations on the smaller leases. Deepening of producers completed or stopped around 4000 feet is being considered by operators who can finance further operations. The Silverstrand tract is at least the temporary center of the proposed activity, and a few wells will be deepened to the schist. The success at the very bottom of the producing zone has prompted plans to deepen wells that have made puny showings on the larger leases.

The shallow townlot wells will remain shallow, since most of the receivers are having a difficult time to meet the payroll. Plans for a blanket receivership for large groups of wells were considered, but the individual receivers naturally fought this plan. Deepening of wells in some of the townlot sectors might not improve production, but toward the southeast a better yield might be expected toward the base of the lower zone.

Santa Rosa Geology Compares With Main Land Oil Areas

Santa Barbara, Calif.—Decision of Standard Oil Company of California to drill a well on the Santa Rosa Island, one of a group of four islands about 20 miles off the coast from Santa Barbara, makes the geology of the island a very interesting speculation. William S. W. Kew, geologist for Standard Oil Company of California, some time ago issued a bulletin in which he discussed the geology of the Santa Rosa Island. The stratigraphy and structure of the island show it to have possibilities which equal certain districts on the mainland which have produced oil in commercial quantities.

This island has exposed on it a larger area of Tertiary sedimentary non-volcanic rocks than any of the Santa Barbara Islands. Most of the rocks on the other islands are of volcanic origin or consist of serpentine, cherts and metamorphic rocks which are commonly referred to as the Franciscan formation, of probable Jurassic age. The formations identified on Santa Rosa Island range in age from Cretaceous to Recent. All of the rocks except the Quarternary were intruded by a basic volcanic rock during the latter part of the Tertiary period. Besides Cretaceous rocks, there are exposed on the island fairly large areas of marine Tertiary and Quarternary strata. The latter series includes the Vaqueros formation (Lower Miocene),

the Modelo formation (Middle Miocene), the Santa Margarita (?) formation (Upper Miocene), and terrace deposits (Quarternary). No Pliocene strata occur on the island.

The Eocene formation has not been definitely identified, due to the apparent absence of fossils; but inasmuch as it occurs uncomformably below the tertiary series, it must be older than the other rocks on the island. Although the contact with the Tertiary beds is in most places faulted, their normal uncomformable relation can be seen in the northeast region of Ford Point.

The Eocene (undifferentiated) formation, which has a total thickness of 1300 feet, may be divided into two lithologic divisions. They are a lower part, composed mainly of sandstone, and an upper part, composed of gypsiferous gray and maroon colored shales containing calcareous sandy beds and concretions.

The Monterey series on Santa Rosa Island apears to be closely allied to the section occurring in Ventura County in the mountains northeast of Fillmore. It represents a continuous period of deposition extending through the lower and middle part of the Miocene period. This section is composed of the Vaqueros and Modelo formations. The thickness of the Vaqueros is about 2000 feet and the Modelo about 1500 feet.

The Vaqueros-Temblor of the Lower and Middle Miocene is definitely correlated with the Vaqueros formation of California by the presence of a number of characteristic fossils. This formation varies greatly in thickness, due to intrusions of basalt. The formation is essentially a sandstone and may be identified by the presence of well-preserved fossils.

The Modelo formation of the Middle Miocene is conformable with the Vaqueros and represents a continuation of the same period of deposition. The Modelo contains a greater percentage of shales and lacks the fossil reefs. The total thickness of the formation is about 1500 feet, and is a small figure when compared with sections on the mainland.

The Areal distribution of the rocks referred to the Santa Margarita formation of the Upper Miocene, coupled with their marked difference in lithology between the greenish sandstones and shales of the Modelo and the buff-colored sandstones and extrusive volcanic rocks, strongly suggest that it lies unconformably on the Monterrey series. Since no identifying fossils were found, these rocks have been doubtfully referred to the Santa Margarita formation. All of the strata in the formation are considerably cross-bedded and have the appearance of shore deposits.

The Terrace deposits of the Pleistocene consist primarily of light buff to brown, unconsolidated, cross-bedded sands varying in thickness up to 50 feet, which contain at various places blocks of rock that have been bored by mollusks. At the extreme west end of the island some of the sand has been locally hardened by a deposit of lime.

Great masses of basaltic rock of the Upper Miocene occur in the more rugged and higher parts of the island and form a part of the Monterey series. It is intruded mainly into the Vaqueros-Temblor formations. This igneous rock resembles that found in the Santa Monica Mountains and the San Pedro Hills.

The structure on the island is essentially that of an uplifted block deformed by folding and faulting. The uplift is thought to have been produced primarily by the intrusion of basalt. Some folding may have existed previously in the Cretaceous and Miocene rocks.

The most important fault on the island is that which practically bisects it from the north side of Skunk Point in a nearly due west direction to the south side of Sandy Point. It is well defined, both topographically and geologically.

The principal fold of the island is the anticline located on the south side of the northern fault block. This fold has a length of over five miles.

California Field Developments

Completions

Company, Well and Location	Initial Production Bbls.	Depth
DOMINGUEZ—		
Shell Oil Co., Reyes 42	800	4395
FRUITVALE—		
Mohawk Pet. Co., No. 9	300	4070
Sea Hawk Pet. Co., No. 2A	400	3792
VENTURA AVENUE—		
Associated Oil Co., Lloyd 90	750	6375
WEST COYOTE—		
Standard Oil Co., Murphy-Coyote 110	1100	6103

New Operations

ELWOOD—Pacific Western Oil Co., No. 92-9, 16-4-29. Caroline C. Spalding, Blue-Goose 93-6, 16-4-29.

KINGS COUNTY—Dudley Dome Oil and Gas Co., No. 1, 9-23-20.

LONG BEACH—Dabney-Johnston Oil Corp., No. 85, 13-4-13.

MT. POSO—Modoc Pet. Co., Vedder 1, 28-26-28.

RIVERSIDE COUNTY—Indio Hills Exploration Co., No. 1, 35-3-5.

SAN LUIS OBISPO COUNTY—Emerich Oil Corp., No. 1, 22-32-22.

Wildcat Drilling Report

(Wells shut down not included)

NORTHERN CALIFORNIA

KERN COUNTY

BUTTONWILLOW — Graham-Loftus Oil Corp.'s Carmel 1, 30-27-22, deepening from 6600 ft, showing gas. General Pet.'s Morris 1, fsh for tubing, td 3095 ft. Milham Exploration Co.'s S. P. 21-7, shut in 2520 ft; S. P. 14-9, 9-28-23, dr 1000 ft. Wilshire Oil Co.'s Salisbury 1, 7-29-24, co above plug at 4650 ft.

BLACKWELL'S CORNER—F. Foweler's Signal 1, rigging to deepen from 100 ft, laying fuel line.

DEVIL'S DEN—C. B. Gauthier's No. 1, 24-25-18, lcn. Taylor-Totem Oil Co.'s No. 1, 29-25-19, rigged to sp.

McKITTRICK—H. T. Purman's No. 1, 22-29-21, sd 3962 ft; M. P. 1, 28-29-21, new lcn.

SEMITROPIC — Fullerton Oil Co.'s Core Hole F, 8-28-24, coring shale 2190 ft.

SHALE HILLS—Rio Grande Oil Co.'s Utting 1, 7-27-19, grading for rig.

WHEELER RIDGE—Barnsdall's K. C. L. 1, 15-11-20, dr shale 5760 ft.

SANTA BARBARA COUNTY

CARPENTERIA—Texas' Community 1-3, 33-4-25, rigging rotary for deep test after drilling series of shallow core holes.

COAL OIL POINT—Equity Oil and Royalty Co.'s Vivian 159-1, co 2110 ft, may deepen.

CUYAMA—Cuyama Valley Oil Corp.'s No. 1, 12-10-27, rigging rotary.

GOLETA—General Pet.'s More 1, will kill and deepen from 4533 ft.

LOS ALAMOS—Barnsdall's Careaga 1, 31-8-33, dr shale 3778 ft. N. S. Wilson's Orena 1, 2-7-33, dr shale 4350 ft.

SANTA MARIA—Western Gulf's Bradley 1, 5-9-33, dr shale 8875 ft.

VENTURA COUNTY

CONEJO—American Oil Co.'s Powell 1, 33-2-20, sd 1590 ft, will deepen.

HOPPER CANYON — Bardeen Pet. Co.'s Lankershim 2, 13-4-19, dr shale 1420 ft.

OJAI—A. N. Macrate's Cosmon 1, 27-4-23, rig.

OXNARD—Magu Syndicate's Utt 1, 17-1-21, fsh for drill pipe 2000 ft, td 5810 ft.

PIRU—Torrey-Ventura Oil Co.'s No. 1, 32-4-18, dr shale 1425 ft.

RINCON—Woodrow Oil Co.'s Woodrow 1, 4-3-24, dr shale 750 ft.

MISCELLANEOUS

KINGS COUNTY—Tulaco Oil Co.'s No. 1, 17-22-22, rig. H. C. Turnham's No. 1, 23-20-22, lcn. A. M. Brown's No. 1, 18-22-19, dr surface sand 200 ft. Eagle Oil and Gas Co.'s No. 2, 15-23-20, dr gray sand 300 ft. E. B. Guess' No. 3, 12-23-22, dr out cmt 1800 ft. Tulare Basin Gas Co.'s No. 1, 2-23-19, lcn.

SAN LUIS OBISPO COUNTY—Emerich Oil Co.'s Holland 1, 22-32-22, dr shale 700 ft. Kent and McDonald's No. 1, 3-32-22, dr shale 2700 ft. Emerich Oil Co.'s No. 1, 13-28-12, dr gray sand 2322 ft.

TULARE COUNTY—Gravity Exploration Co.'s Buck 1, 11-24-23, dr shale 2215 ft; Buck 2, 11-24-23, new lcn.

YOLO COUNTY—Pacific Northern Gas and Oil Co.'s Guinda 1, 23-12-3, co 1800 ft, td 2178 ft.

SOUTHERN CALIFORNIA

CALABASAS—L. W. Rucker's No. 1, 26-1-17, fsh for iron 900 ft.

FULLERTON—Orangethorpe Corp.'s Skinner 1, 32-3-10, rig.

HERMOSA BEACH—Tulsa Oil Co.'s Hermosa 2, 6-4-14, will put on pump, td 3140 ft.

LYNWOOD—William L. Jones' Graham 1, 31-2-12, co 1572 ft.

MONTEBELLO—Wardell and Meninchini's No. 1, 7-2-11, sp.

NEWHALL—W. T. Ball's No. 1, 34-3-16, rig. Ora Negra Dev. Co.'s No. 1, 14-3-16, lcn. Southern California Drilling Co.'s Needham 6, 13-3-16, dr 200 ft.

NEWPORT—Nuoil Co.'s Banning 2, 29-6-10, will deepen from 1975 ft.

OLINDA—Graham-Loftus Oil Corp.'s 18-3-9, pumping 70 bbls above plug at 4695 ft, td 9285 ft.

PUENTE HILLS—Eldorado Oil Co.'s Baird 1, 30-2-9, dr hard sand 2619 ft.

WILMINGTON—Walter I. Barcus' Lupie 1, 28-4-13, rig.

RIVERSIDE COUNTY—Indio Hills Exploration Co.'s No. 1, 35-3-5, lcn.

SAN DIEGO COUNTY—Borderland Exploration Co.'s Pueblo 2, dr out cmt 2680 ft. Itasca Pet. Co.'s Mesa 1, dr hard shell 1575 ft.

OKLAHOMA FIELDS

New Pool Opened in Southern Pottawatomie County. Plan Community Test in Southwest Noble County.

FLOYD SWINDELL, ***Staff Representative, Tulsa, Oklahoma***

Eleven Oklahoma City Wilcox Sand Wells Making Water

Oklahoma City.—Skelly Oil Company reported water for the first time in Ledbetter 1, NE NW NE Section 22-11n-3w, in the new Wilcox sand area in the southwestern portion of the Oklahoma City pool. This well was completed March 9, 1932, making 580 barrels the first four hours from Wilcox sand at 6450 to 6533 feet and reported no water at that time. Opened early this week it made 138 barrels an hour for three hours and was cutting 4½ per cent.

The other 10 Wilcox sand water wells are as follows: Continental Oil Company's Sudik 1, NW NW NE Section 6-10n-2w, drilled to 6705 feet and plugged back to 6680 feet to make 410 barrels of oil in eight hours on gas lift and making a small show of water; Continental Oil Company's Sudik 5, SW NW NE Section 6-10n-2w, drilled to 6694 feet and plugged back to 6644 feet to make 50 barrels in 24 hours pumping with no water showing; California Petroleum Company's Stout 1, NW SE NW Section 2-11n-3w, drilled to 6469 feet and now making 156 barrels in four hours, of which 25 per cent is water; Phillips Petroleum Company's Burt 1, NW SE SW Section 10-11n-3w, drilled to 6575 feet and making 449 barrels in 24 hours flowing through a three eighths-inch choke against 350 pounds back pressure under which it makes no water; Sinclair Oil & Gas Company's School Land 67 No. 2, SE NE SE Section 36-11n-3w, drilled to 6758 feet and plugged back to 6733 feet to make 932 barrels in 24 hours cutting 10 per cent; Sinclair's School Land 67 No. 7, NE NW SE Section 36-11n-3w, drilled to 7384 feet and plugged back to 6493 feet to make 245 barrels on the swab with no water showing; Sinclair's Vencl 5, SW NW SE Section 31-11n-2w, drilled to 6660 feet where it makes approximately 220 barrels per hour cutting six per cent water; Sinclair and Phillips' School Land 69 No. 2, NW NE SW Section 36-11n-3w, drilled to 6700 feet and plugged back to 6587 feet, where it makes approximately 106 barrels per hour cutting three per cent water; and Wilcox Oil & Gas Company's Laue 1, NE NW NW Section 10-11n-3w, drilled to 6551 feet where it makes about three per cent water. California's Stout 1, Phillips' Burt 1, Sinclair's Vencl 5, and Wilcox Oil & Gas Company's Laue 1, have not been plugged back.

Oklahoma City Allowed 105,000 Barrels

April 29

Oklahoma City.—Production of the Oklahoma City pool was raised to 105,000 barrels daily for May following a hearing before the Oklahoma Corporation Commission April 28. Purchasers at that time made nominations for increased purchases for the latter part of April and this prompted the commission to allow the increased output for May. Nominations for the last part of April were at the rate of 106,071 barrels daily.

The concerns which increased nominations are the Empire Oil & Refining Company, Indian Territory Illuminating Oil Company, White Oak Refining Company and the Champlin Refining Company.

Production on the schedule for May has been allocated as follows:

From wells making three per cent or more of water	*9,800*
Arbuckle lime wells	*2,500*
Flat allowable per well other than Arbuckle lime	*17,800*
From other wells	*2,445*
From 2.1 per cent of potential output of field	*72,455*
	105,000

New Seminole Pool Opened South of Sacred Heart

Seminole, Okla.—Barnsdall Oil Corporation et al's Gray 1, NE NE SW Section 25-6n-4e, was opened Thursday morning for a test of 135 barrels the first hour and 90 barrels the second, definitely opening a new pool south of the Sacred Heart area in southern Pottawatomie County. It is located 4½ miles west of the town of Konawa and about 3½ miles northwest of the Beebe pool. Top of the Simpson dolomite was encountered at 3339 feet and a soft streak in the dolomite was logged from 3484 to 3487 feet, at which depth it swabbed 50 barrels the first hour. Drilled three feet deeper to 3490 feet it flowed 60 barrels the first hour and was pinched in to eight barrels per hour because of lack of sufficient storage facilities. Gulf Pipe Line Company is making connection to the new discovery.

This test has been of interest from several viewpoints. First because of the fact that it was spudded on the day the lease would have expired because of a "top lease" which had been executed by other companies. Top leasing, a term somewhat new to Mid-Continent operators, means that the lessor grants a new lease to a different party, to take effect at the expiration of any existing lease. The test has run consistently high on all upper formations and on top of the Simpson formation is 757 feet higher than Carter Oil Company et al's Monnette 1, SW SW SW Section 35-7n-4e, discovery well in the Monnette pool which is located approximately 4½ miles northwest of the Gray discovery well. The new well is owned jointly by Barnsdall, Gypsy, Texas, Sinclair-Prairie and Shell. It is understood that Umpire Ray M. Collins will classify it as a wildcat discovery and restrict production to 50 barrels per day until other drilling is done.

Carter Oil Company et al's Monnette 1 will be opened on May 1, and allowed to produce 44 per cent of its potential.

Tulsa Geologists Discuss Western Oklaoma-Kansas

Tulsa.—When the time comes that the oil industry needs additional reserves in the Mid-Continent, development will swing westward into the practically unexplored portions of western Oklahoma and Kansas. Those familiar with general conditions in western Oklahoma know that any trend in this direction will result in widespread geological study and most certainly would result in at least a partial relief in the unemployment situation in that profession.

In consideration of the importance of this area, the Tulsa Geological Society presented a symposium on western Oklahoma in its meeting of Monday evening, April 18. The Permian System, which covers the surface of the area, was discussed by Frank C. Greene; the underlying Pennsylvanian, by Charles Ryniker; Mississippian by Glenn S. Dille; pre-Mississippian Paleozoic by Mrs. Fanny C. Edson; and basement rocks and structural trends by Clyde M. Becker.

Development of New Sand At Seminole Delayed

Tulsa.—The Calvin sand area of East Earlsboro and West Seminole pools will remain shut in until June 1 and no drilling permitted until after that date according to an agreement of operators who met here April 27 with Ray M. Collins, state proration umpire. Commercial production was discovered in this horizon when Stanolind Oil & Gas Company plugged back Jones 2, SW SE NW Section 20-9n-6e, an old Wilcox sand well in East Earlsboro. This well was plugged back to 2800 feet and completed for 2595 barrels on December 16, 1931. Sand was reported from 2770 to 2800 feet and production was initially obtained through a rip in the casing. Although entirely problematical the sand may produce over a large portion of the East Earlsboro pool and the action of operators in holding up development at this time may be exceedingly beneficial.

Wilcox Will Obey Orders Of Corporation Commission

Oklahoma City.—Announcement was made late Wednesday afternoon that Wilcox Oil & Gas Company, through its president H. F. Wilcox, would abide by all proration orders of the Oklahoma Corporation Commission. This action followed dissolution of a temporary restraining order which shut in all the company's wells on Thursday, April 21. District Judge R. P. Hill, who granted the temporary restraining order, assisted by Judge Lucius Babcock, reviewed the order early this week and rendered a decision in which it was stated that the corporation commission has full power to make and enforce proration regulations and that the district court has no jurisdiction in such cases. The company is charged with running about 699,000 barrels more than its own allowable and that of wells to which it had connection during the five months period ending February, 1932. It was further charged that company officials had refused to file necessary records with the umpire and with the state tax commission.

It was thought at first that dissolution of the restraining order would result in the use of National Guardsmen by Governor William H. Murray since it would have permitted Wilcox Oil & Gas Company to produce its wells unrestricted and would therefore have been a severe blow to proration. Governor Murray refused to make a statement regarding his action in the event that the wells should be opened but those who have followed his actions in the past believe he would have ordered out the guard for patrol duty at all wells of the company.

In discussing the proration question in a recent issue of the Blue Valley Farmer, Governor Murray said, "I have explained in these columns before that the military control is to keep an injunction of the courts from paralyzing the corporation commission and breaking the commission's effort to control. I told the oil men some time ago that I would hold the military rule which holds up the price of oil and thereby increases the revenue to the state $400,000 from what it was when the oil sold at 22 cents, encourages the lease by independents of the farmers' land, and aids the school children on the school land—that I would give them reasonable time to enforce proration properly, and if they could not do it, I would take complete military control and prorate it under my own direction."

Foster Petroleum Company Seeks to Quit Oklahoma

Bartlesville. — The Foster Petroleum Corporation has filed with the secretary of state an application to withdraw its permit to do business in Oklahoma, according to a statement made by H. V. Foster, president and organizer of the company. Early reports stated that this action came because of high taxes but this is denied by Paul S. Dahlgren, general manager.

Foster's statement to the press was as follows: "The Foster Petroleum Corporation has withdrawn from the state principally because it ceased to have any active business or holdings in the state approximately two years ago. Its present business and holdings are outside the state of Oklahoma."

The corporation's application was held up by the assistant secretary of state pending the filing of affidavits showing

Oklahoma Field Developments

New Operations

CREEK COUNTY—Windsor et al, Hinton 1, se c nw 25-19-8e. M. S. Hughes et al, Green 1, se c nw sw 11-19-9e. T. E. Mann et al, Smith 1, ne c se se 18-19-9e. Gled Oil Co., Hamilton 4, nw c ne 29-19-9e. Bert Swift et al, Nichols 1, ne c sw 1-18-8e. Gibson and Metz, Sellers 1, sw c ne sw 30-17-7e, (owd). G. A. Simons et al, Snoddy 1, cel ne nw 21-14-11e.

GRADY COUNTY—Carter Oil Co., Carson 1, se c 12-3n-8w.

MUSKOGEE COUNTY—Braman Oil Co., Jackson 5 (owd), se c sw se nw 17-13-16e.

OKLAHOMA COUNTY—I. T. I. O., Miller 1, ne c nw 35-11-3w. I. T. I. O., Little 3, nw c ne ne 27-11-3w. I. T. I. O., Wickline 1, sw c nw 26-11-3w. Gulf Production Corp., 1, se ne nw 22-11-3w. Skelly Oil, Moon 1, ne c nw sw ne 22-11-3w. Mead Bros. Drlg. Co., Huddleston 1, se c ne nw se 22-11-3w. Harper-Turner et al, Knapp 1, ne c sw 22-11-3w. Harper-Turner et al, Alvah 1, ne c se se nw 22-11-3w. I. T. I. O., Carney Heights 1, sw c ne 22-11-3w. Phillips Pet. Co., et al, Gentry 1, nw sw ne 3-11-3w.

OKMULGEE COUNTY—A. E. Kirkland and Son, Bell 11, se nw nw 17-15-13e. J. L. Selby, Flint 20, cwl nw ne 26-14-14e.

PAWNEE COUNTY — Ray Spess et al, Tweedy 1, ne c nw 14-20-9e.

PONTOTOC COUNTY — Stanolind Oil & Gas Co., Roberts 3, nw sw ne 32-5-5e.

SEMINOLE COUNTY—Bee O&G, Butler 1, sw c ne 20-9-6e. The Texas Co., Eliza 3, sw nw se 19-7-8e.

STEPHENS COUNTY—Geo. Pace, Dilley 2, sw c nw sw 22-2s-7w.

TULSA COUNTY—S. S. Owens, Bruner 1, cnl sw sw 13-19-13e. Cummings et al, Brunner 1, cwl ne nw 27-17-13e.

Completions

Company, Well and Location	Initial Production Bbls.	Depth
CREEK COUNTY—		
Gled and Elison, Barton 1, se c ne 36-9-8e	¶1¼	2217
Johnson O&R, Bible 3, se c sw 20-19-9e	75	2166
MUSKOGEE COUNTY—		
Robinson Oil Co., Brown 1, ne c sw 18-13-16e	*	1777
OKFUSKEE COUNTY—		
Shell Pet. et al, Hopping 2, sw c ne ne se 21-12-11e	4½	2180
F. A. Havel, Likowski 1, csl ne sw 23-11-11e	40	1608
OKLAHOMA COUNTY—		
I. R. Korh et al, Coats 1, cwl nw nw se 15-11-3w ....4 hr.	5210	6394
Slick Estate, Classen-Edwards 10, sw c ne nw sw 3-11-3w ....4 hr.	4770	6350
OKMULGEE COUNTY—		
J. E. Wallace, Colbert 4, csl nw nw 14-14-14e	20	1751
F. E. Cusack, Doyle 5, (owd) ne c se sw 15-13-14e	35	2728
J. L. Selby, Flint 5, cel ne nw 26-14-14e	*	975
PAWNEE COUNTY—		
Ed Reese, Rules 1, cwl nw se 9-20-7e	¶½	2635
PONTOTOC COUNTY—		
Stanolind O&G, Burk "C" 2, se sw ne 32-5n-5e	185	2411
SEMINOLE COUNTY—		
The Texas Co., Eliza 2, se nw se 19-7-8e 2135		3070
Amerada Pet. Corp., Tiger 3 (owd) ne sw ne 3-8-5e	705	3982
STEPHENS COUNTY—		
Geo. Pace, Dilley 1, nw c sw sw 22-2s-7w	250	1734
P. L. Gilbert, Medley 1, sw c ne ne 2-2s-8w	*	2242
Crane and Rankin, Dare 1, sw nw nw 1-2s-8w	6	1755

Wildcat Drilling Report

(Wells shut down not included)

LINCOLN COUNTY—T 17n, R 5e, Sec. 36, W. M. Mote et al, School land 1, nw c, dr 3020 ft. T 14n, R 3e, Sec. 2, Hilton Phillips, Philips 1, sw c nw, 6-in at 5001 ft, co.

CREEK COUNTY—T 14n, R 7e, Sec. 18, Cal Cul, Holleyman 1, se c ne se, fsh 705 ft.

LINCOLN COUNTY—T 12n, R 5e, Sec. 3, Sovereign Oil Corp., Selacek 1, ne c se, reaming td 4134 ft.

PITTSBURG COUNTY—T 4n, R 16e, Sec. 3, Ruby Ann Oil Co., George 1, cel nw se, dr 935 ft.

SEMINOLE COUNTY—T 10n, R 6e, Sec. 19, Bunte et al, Brunner 1, se c nw, rig.

POTTAWATOMIE COUNTY—T 8n, R 4e, Sec. 1, Clara O&G, Timms 1, sw nw ne, dr 3408 ft.

CUSTER COUNTY—T 14n, R 14w, Sec. 12, Miley Pet. Co., Caldwell 1, ne c, bldg rig.

WASHITA COUNTY—T 9n, R 17w, Sec. 23, Miley Pet. Co., Chapman 1, ne c sw, rig.

CADDO COUNTY — T 5n, R 9w, Sec. 6, Mid-Kansas & Ramsey, Culp 6, nw c ne, td 10,079 ft, pb to 6089-6094 ft, pb 3381-3400 ft, show 30 bbls oil, 15 wtr.

COAL COUNTY—T 2n, R 8e, Sec. 10, Rabiel Oil Co., Miller 1, se c ne, (owd) sd 1845 ft.

ATOKA COUNTY—T 3s, R 10e, Sec. 18, Brookshire et al, Guinn 1, nw c, fsh 1867 ft.

that no capital increases have been made within the state during the years 1927 to 1931 inclusive and that proper fees have been paid. The last affidavit filed was in August, 1926, placing a value of $850,585.20 on its capital assets. Under the 1931 license tax law the corporation was assessed the maximum fee of $10,000 by the state tax commission which held the capital to be in excess of $10,000,000.

Foster Petroleum Corporation at one time held considerable acreage in the Oklahoma City pool but disposed of these properties about two years ago when it sold to Indian Territory Illuminating Oil Company, a Henry L. Doherty subsidiary of which H. V. Foster is president.

Operate Sinclair Prairie Line from Independence

Tulsa.—It is learned that general offices of the Sinclair Prairie Pipe Line Company will remain at the old Prairie offices in Independence, Kansas, where Clark H. Kountz, chairman of the board will make his headquarters. John R. Manion, president, will remain in Tulsa at least temporarily but may be transferred to Independence at a later date.

Reorganization of the pipe line departments of the newly merged companies was the first step which has materially effected personnel since confirmation of the union. Thirteen former offices of the two companies have been eliminated through merging with other districts, leaving nine field offices located as follows: Caney, Eureka and Neodesha combined at Neodesha; El Dorado combined with the Wichita office; Oklahoma City, Shawnee, and Holdenville, combined with office at Shawnee; Okmulgee and Bristow with office at Bristow; Cleveland and Tulsa with office in Tulsa; Pawhuska, Nowata and Bartlesville with office at Bartlesville; Ardmore and Bowie with office at Bowie; Mangum, unchanged; and Brownwood, Caddo and Ranger with office at Eastland.

Noble County to Get Community Wildcat Test

Tulsa.—Announcement was made during the week of a community test to be drilled nine miles southwest of the town of Perry in southwestern Noble County by L. H. Wentz and associates. Location is to be CSE NW Section 17-20n-2w, on acreage owned by Shell Petroleum Corporation, Gypsy Oil Company, Carter Oil Company, Sinclair-Prairie Oil & Gas Company, Empire Oil & Refining Company, Phillips Petroleum Company, Twin State Oil Company, and L. H. Wentz. Work will commence as soon as titles can be cleared which should not require over a few days.

It is understood that the area has been surveyed geophysically and that a "high" is responsible for the new test.

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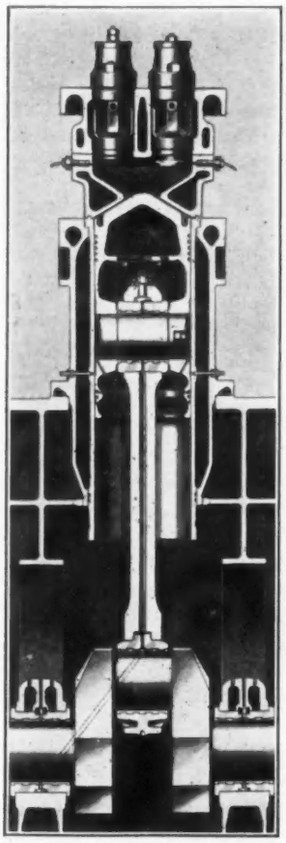

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KANSAS FIELDS

Two Areas Threaten Ritz-Garrett-Decker Leadership as Latter Show Loss in New Operations.

FLOYD SWINDELL, *Staff Representative, Tulsa, Oklahoma*

Two Kansas Areas Show Marked Activity Increase

Wichita, Kansas.—Two new Kansas areas are budding into minor drilling campaigns and either or both may take their places along with the Ritz-Decker-Garrett area of McPherson County, which still leads the state in number of activities. The new Göering pool, northeastern Reno County, has three drilling wells, one location rigging up, and one rig, placing it in the lead among the newer western Kansas areas. When last reported Olsen Drilling Company and Shell Petroleum Corporation were drilling below 2925 feet in Johnson 1, SW SW NW Section 24-23s-4w; below 1970 feet in Roberts 1, CNW NW Section 25-23s-4w; and were rigging up Goering B-1, CNE NW Section 25-23s-4w. Krehbiel 1, CNE NE, Section 26-23s-4w, was a rig.

Olsen Drilling Company, Cromwell et al, were drilling below 3315 feet after having set six-inch casing one foot in the Mississippi chat horizon at 3266 feet.

In the new pool about two miles southeast of the town of McPherson, two wells were drilling and one rig and one location were on the report. Prunty Drilling Company was drilling below 1900 feet in Casey 1, SE NW NW Section 35-19s-3w, six locations due north of the discovery well; and Shell Petroleum Corporation was drilling below 2150 feet in Lawrence 1, SE SE NW Section 35-19s-3w, four locations north and two east of the discovery well. Mid-Kansas Oil & Gas Company's Helstrom 1, NW NW SE and Helstrom 2, SW NW SE Section 35-19s-3w, were a rig and location, respectively. Both are approximately one-half mile northeast of the discovery well.

Ritz-Decker-Garrett

The total number of active rigs in the Ritz-Decker-Garrett area dropped to 14 during the past week as compared with 22 the week before. This decrease in activity was due to the completion of six wells and the failure of operators to make any new starts. The largest completion of the week was that of Dickey Oil Company at Decker "B" 2, SW NW SE Section 35-19s-2w, in the new west Ritz extension. Topping the chat horizon at 2969 feet the well was shut in after having penetrated the pay formation only one foot and flowing 480 barrels in two hours. It is located slightly less than one-half mile northwest of Dickey Oil Company's Decker 1 which came in as the largest chat well in the area and now has the largest potential of any of the wells in the vicinity.

Vernon Oil and Gas Company and Shell Petroleum Corporation shut in Drum 2, NW NW NE Section 35-19s-2w, after it had flowed 240 barrels the first two hours. Production is coming from chat topped at 2905 feet and penetrated to 2935 feet. Six-inch casing is set on top of the chat.

Winfield Townsite activity, which resulted from the deepening of an old gas well, has been attracting considerable attention during the past few weeks and now has five drilling wells, one cellar, and one rig on the ground. New production is being obtained from the Arbuckle limestone at depth ranging from 3275 to 3375 feet.

Arkansas River Ownership Involved in Suit

Wichita.—The United States Circuit Court of Appeals has under consideration arguments on appeals of four individuals pertaining to the question of rightful beneficiaries on royalties paid on production from the Arkansas River bed in the Churchill pool in Sumner and Cowley Counties, Kansas. A previous decision held that the river is navigable and, therefore, property of the state. More than $1,600,000 has been collected by the state from Shell Petroleum Corporation which holds the leases in question according to a statement of the appellants, who argue that the stream is not navigable and that adjoining land owners have riparian rights to the river bed land.

Kansas Field Developments

Completions

Company, Well and Location	Initial Production Bbls.	Depth
COWLEY COUNTY—		
McKnabb et al, Hutto 2, se sw ne 22-32-4e (lot 10, blk 25, Reynolds College Addition)	125	3357
ELLSWORTH COUNTY—		
Robertson et al, Stratman 2, sw se ne 7-17-10w	1970	3267
GREENWOOD COUNTY—		
Harwood Oil Co. et al, Carson 2, ne c nw 33-23-11e	100	1950
Shull Drlg. Co., Johnson 2, se ne nw 16-24-12e	18	1585
McPHERSON COUNTY—		
Slick, Pryor & Lockhart, Stuckey 1, (owd) se sw sw 27-20-3w	565	3393
Washoma Pet. Co. et al, Meeks 2, ne c sw 7-20-1w	85	3400
Rush Oil Co. et al, Robinson 1, (owd), c se sw 10-19-2w	110	2969
STAFFORD COUNTY—		
Mid-West Refg. Co. et al, Figgers 11, c ne ne 1-23-12w	200	3590

New Operations

CHAUTAUQUA COUNTY—Anderson et al, Lemert 4, sw ne se 36-34-9e.

COFFEY COUNTY—Aikman and Young, Strickland 2, sw c 14-22-13e.

ELLSWORTH COUNTY—Vickers Pet. Co., and T. C. Johnson, Claussen 1, c se nw, 31-15-10w.

GRAHAM COUNTY — Schleimeyer et al, Smith 1, se c 24-8-25w.

GREENWOOD COUNTY—Phillips Pet. and Gore, Beal 10, sw se ne 28-23-11e. Harwood Oil Co., Carson 3, sw nw ne 33-23-11e. Crisswell et al, Lowery 2, sw c ne sw sw 22-26-9e.

McPHERSON COUNTY—Prunty and Continental Oil Co., Nilson 1, sw nw sw 25-19-3w.

RENO COUNTY — Olsen Drlg. Co. et al, Goering "B" 1, c ne nw 35-23-4w. Olsen Drlg. Co. et al, Krehbiel 1, c ne ne 26-23-4w.

RICE COUNTY—Slick, Pryor & Lockhart, Orth 1, se c ne 27-18-10w.

SEDGWICK COUNTY—Patton-Patton et al, Swanson 2, c nw ne 6-26-2e. Rosenthal et al, Pinsen 1 (owd), cnl sw sw 15-25-1e.

Wildcat Drilling Report

SUMNER COUNTY — Trees Oil Co. and Shell, Springate 1, ne se sw, 6-34-2e, ur 6-inch, td 3120 ft. Trees Oil et al, Tompkins 1, sw c, 26-33-1e, lcn.

SEDGWICK COUNTY—Tulsa Oil Co., Linot 1, c se sw, 8-28-2e, ru.

PRATT COUNTY—Ninnescah O&G, Hardesty 1, sw se se, 28-27-11w, rig.

EDWARDS COUNTY — Mid-Kansas, Converse 1, sw ne ne, 30-24-18w, dr 2375 ft.

RENO COUNTY—Martin et al, Yoder 1, c nw nw, 15-24-5w, spd.

FINNEY COUNTY — National Ref. Co., Wells 1, sw c, 13-23-30w, dr 4708 ft.

RENO COUNTY—Jarvis & Wright, Rainbow 1, nw nw se, 33-22-7w, top K. C. L. 3001 ft, dr 3465 ft.

HARVEY COUNTY—D. R. Louck, Regier 1, sw se nw, 9-22-3w, td 1850 ft, fsh.

BARTON COUNTY—Skelton, Ott 1, ce se se, 16-19-14w, top Sil. 3530 ft, so 3535 ft, sd 3546 ft.

McPHERSON COUNTY — Deitrick et al, Sinclair 1, se sw, 25-19-1w, dr 2054 ft.

RICE COUNTY—Slick et al, Orth 1, se se ne, 27-18-10w, lcn.

ELLSWORTH COUNTY—Johnson & Vickers, Claussen 1, c se nw, 31-15-10w, rog.

DOUGLAS COUNTY — Hewitt & Lewis, Dodder 1, cnl sw, 7-15-18e, sd 1335 ft, hfw.

RUSSELL COUNTY — Twin Mounds Oil, Weis 1, c w½ ne nw, 30-13-4w (owd), sd 3100 ft.

GRAHAM COUNTY — Schleimeyer et al, Smith 1, se c, 24-8-25w, rog.

SHERIDAN COUNTY—Flo et al, Schoemaker 1, se sw sw, 27-7-26w, td 4505 ft, fsh bailer.

PHILLIPS COUNTY—Hall et al, Donaldson 1, c ne ne, 25-5-18w, td 1355 ft, rng 12-inch.

EAST CENTRAL TEXAS

Propose Hearing on Meters for Pipe Lines.

Drilling Costs Reduced to Low Levels; Light Materials

H. H. KING, *Staff Representative, Fort Worth, Texas*

Competition Reduces Cost Of Drilling to Low Levels

TYLER, TEXAS.

THE average cost of a completed oil producer in the East Texas field ranges from $12,000 to $16,000 connected into tanks, or approximately $10,000 less than the average cost borne by operators during the early stages of development. Drilling costs, labor and equipment have been forced to lower price levels in order to attain this drastic reduction in the cost of a completed well.

Prices paid drilling contractors have dropped lately to an average of $1.60 to $1.75 per foot, with the latter available only from a small percentage of the operators, who held to a $2.00 scale during most of the winter. The footage basis of awarding contracts is rapidly being substituted for a flat sum per well, which now ranges from $6000 to $6500, but with no extra allowance made for coring, swabbing and forced shutdown time caused by cementing pipe, changing drill stem, etc. Drilling derrick, fuel and water are furnished by the majority of the operators when settling for rotary work under the above two plans.

Competition Reduces Prices

Voluntary slashing of prices by drilling contractors in search of work for their rigs and regular employes has enabled the operators to obtain first class work at reduced rates without much effort. It is a matter of record that some companies have been reluctant to lower their scale to contractors in order to be assured of a straight hole and a first class job, but repeated bids for work by responsible contracting firms at reduced prices leaves no alternative.

One major company just entering into its most aggressive development program in the field has developed an unusual procedure of operating literally without an organization in the field. This company checks the entire responsibility of drilling and completing a well into tanks upon the contractor. A stake is driven as a location guide for the drilling contractor. The contractor furnishes his own drilling derrick, fuel, water, cement and outside labor for cementing the two strings of pipe. Contractor also provides the specified size and length of surface pipe. However, the company furnishes and moves in the oil string of casing, tubing, Christmas tree, gas trap and flow tanks. Upon completion of the well into the tanks the contractor has been receiving $8300, but this flat rate has lately been cut nearly $1000 by competing contractors seeking a share of the business. The company carrying on this method of development rotates its field superintendents, who naturally must work long hours in checking up on the contractors, with a relief man coming onto the scene at seven to ten day intervals. A skeleton force of lease men are engaged to police the properties and flow the daily allowable of wells.

No Depreciation Allowance

Only a small percentage of the many hundred rotary contractors engaged in the field are making sufficient profit to take care of replacements when their rigs and drill pipe cease to be serviceable. Wear and general depreciation of equipment doing service in this field is not excessive. Many rigs fulfilling the qualification of a "haywire outfit" are doing duty, and turning out successful wells in 20 to 30 days. The number of junked holes has been remarkably low for the field, considering the hazards.

Promptness and ability to line up new work within a given area are two vital factors in governing the earning power of a rig under the reduced rate. The field involves such a great area that removal of a rig from one end to the other incurs a trucking bill that represents a large portion of the net profit of an average contract. Operators using their own rigs for all or part of their drilling make it a point to avoid long jumps, and often contract work rather than absorb an excessive transportation bill. Contractors having four or more rigs fare better through having a wider distribution of their executive overhead costs.

Insurance premiums ranging from $10 to $15 per $100 pay roll is borne by contractors in adhering to the industrial compensation insurance laws of Texas. This insurance burden is a heavy drain on the rig owners, and is supposed to be compulsory, but charges are made frequently that incomplete payrolls are submitted in order to reduce premiums. Because of the liability involved many operators are insisting on an account-

Salt Water Causes Caution in Completions East of London

Longview, Texas.—A menacing salt water situation has invaded the west central portion of the F. Cordova survey, due east of London in the East Texas field, despite orderly production methods and the halting of wells at a supposedly safe level above the expected water table. The most recent casualty among the group of wells that have been deprived of their flush production is the East Texas Refining Company's Grissom 1, located in the northeast corner of 184.5-acre tract. This well was completed June, 1931, making 192 barrels per hour through casing from regular sand at 3726-3748 feet, placing the bottom of the hole at 3283 feet below sea level. It began making 30 per cent water while restricted to 71 barrels daily, plugging back 10 feet and testing of casing for possible leaks failed to reduce the water but 15 per cent.

Gulf Production Company's G. G. Turner 7, which was reported early in April making 60 to 75 per cent B.S.&W., and the same company's W. Shaw 2-A, which making 3½ per cent water, are located in this area. The latter has a sub-sea depth of 3310 feet, while the bottom of the hole on Turner 7 is reported to be 3319 feet below sea level. These wells are situated more than a mile east of the west edge of the field, and were considered immune from water troubles for a long period of orderly production.

A revised survey of wells showing water with production in the field lists 70 producers. The greatest number is in Rusk County, while new additions have been the most numerous along the northwest flank of the field in Upshur County.

ing of insurance carried on drilling crews.

Using All Economies

Many operators are completing wells for the same sum that was originally spent for equipment alone during the early stages of development, but in doing so second hand material is mostly used. Smaller and lighter weight pipe is now more popular because of the economical advantage. Taper tubing has been introduced successfully to serve a dual purpose of lowering the initial cost of a well, and also to prolong the flowing life. Instead of individual separators and tank batteries for a well the tendency now is to throw all the wells on a lease, whenever possible, into the same trap and tanks. Elimination of elaborate Christmas trees, and high pressure fittings have likewise been resorted to by operators in their efforts to lower well costs.

Payrolls of the operators have come in for a heavy reduction, with many taking undue advantage of the surplus of skilled labor prevailing in the field, and paying wages that barely sustain workmen with food and shelter. Companies that normally provide camp houses, gas from private wells and water free have in some instances lately eliminated these privileges from their workmen as part of the program to stimulate earnings in the field.

Lack of Pipe Line Outlet May Slow Down Drilling

Tyler, Texas.—Possible abatement of drilling to some extent in the East Texas field because of difficulty in getting pipe line connections for new wells is seen in the decline of new locations to approximately 140 for the week ending April 29. This represents a decline of about 20 compared to the previous week.

The steady growth in field activity lately is reflected by a continued heavy quota of completions and during the past week 132 new producers were added, thus giving the field a total of about 5200 flowing and pumping wells.

Preliminary tests given outpost wells situation about one mile in advance of production on the north and south ends of the East Texas field during the past week indicate successful producers in the making. E. Slick et al's Thomas 1, located on a 15-acre lease, H. F. Rogers Survey, and about one mile northeast of Slick et al's Whitehurst 1, a recent extension well, showed sufficient oil on drill stem test at 3595 feet to warrant the setting of casing to try for an oil producer. Assuming this outpost makes a well, the field will have a maximum length in a northeast to southwest direction of about 39 miles, including about two miles of wet gas territory on the extreme south end.

The gas area on the lower end of the East Texas field was extended approximately 6000 feet to the south when Wemack Oil Company (J. Earl Brown) J. G. Arnold 1, Wm. Christian survey, gave assurance of making a big gasser from Woodbine sand at 3677-3689 feet when drill stem test was made April 24. This outpost has a sub-sea total depth of 3302 feet, and drilled through a layer of sand showing oil, with some possibilities of developing into an oil producer. Should oil appear at this point it would mark the beginning of a new oil pool, as the area between this test and the field proper is barren of oil as determined by the gasser on the Ras Lacy tract. Casing has been cemented on Arnold 1 to complete over the week end, while in the meantime the owners are making arrangements to build approximately eight miles of four-inch line north into the Cadena and adjoining surveys to market the expected gas production as fuel. Sinclair Prairie Oil Company and Stanolind Oil & Gas Company are each operating gas lines from gassers on the Ashby and Lacy tracts, respectively. Joe Marr Drilling Company's Tom Lacy 1, located in northwest corner 50-acre tract, J. H. Sparks survey, and 1½ miles southwest of the Lacy gasser, is rigging up to try for a new extension to the gas area.

Completions that fail to register heavy flows on initial gauges continue to be confined to the rim of the East Texas field. Mullin-Strickland et al's Brewer Cemetery 1, located on the southeast edge of the field and west portion of the Pena survey, flowed 65 barrels oil in 75 minutes partly choked from broken pay at 3577-3669 feet, but sustained a sharp drop in pressure in making this gauge. Sun Oil Company is starting an east offset, while Stanolind Oil & Gas Company is to drill a south offset. Walter H. Gant et al's L. A. Till 1, located a short distance to the northeast, has not been made into a commercial producer, and will likely be completed as a pumper at 3658 feet.

In the north part of Rusk County, Geo. I. McKee and Everts Drilling Company's Knights of Tabor 1, a half-acre site in Hy. Hobson survey, has been completed making 67 barrels on 10 hour pumping gauge after shot at total depth of 3766 feet.

Pumping equipment is also required on Clark & Brooks' Mayfield 1, an east side well that failed to flow when given swabbing test in broken sand and shale at 3622-3702 feet. Shell Petroleum Corporation's T. Wells 1-B, located a short distance to the northwest, has been in process of completion for a month as a pumper, with the hole bottomed in Georgetown lime at 3774 feet.

State Asks Bids on Sabine River Bed Through Field

Austin, Texas.—Bids have been asked, to be opened May 16, on 560 acres of Sabine River bed through the East Texas field by the Board of Mineral Development which met in the office of Governor R. S. Sterling here May 25. The area in question was reserved from the usual procedure of leasing state mineral lands by a special act of the [illegible] session of the legislature, and leasing has been delayed pending disposition of a suit under which individuals sought to file claims to portions of the river bed. This suit was decided in favor of the state last week.

The area to be leased has been divided into eight tracts and bids have been asked (a) to lease for oil and gas, (b) to drill for oil or gas, or (c) to purchase said minerals in place.

The portion of the river bed offered begins at the intersection of the west line of Gregg County with the river and continues down stream to the southwest corner of M. Dillard Survey (70 acres); to southeast corner S. L. Davis Survey (52 acres); to east corner John Tate Survey (63 acres); to northwest corner James Moore Survey (70 acres); to southeast corner Thos. Johnson Hrs. Survey (94 acres); to east line L. B. Outlaw Survey (50 acres); to northeast corner A. Cormack Survey (66 acres); to northeast corner S. Baggett Survey (96 acres).

Sabine River lease forms prepared by Attorney General Allred, calls for drilling within 60 days in the producing area. Wells must be drilled as soon as there is a producing offset within 1,320 feet. No royalty is set but the statute does require at least one-eighth. Should any lessee refuse to carry out the drilling provisions of the lease, the lease would be voided except for an area of 660 feet surrounding any wells that lessees may have drilled. The form uses the exact verbiage of the statute on protection against stream pollution.

BEST COPY AVAILABLE

Need for Retaining Present East Texas Allowable Shown

By R. W. BYRAM
Staff Correspondent

AUSTIN, TEXAS, APRIL 29.

EVIDENCE to show that any increase in the present East Texas allowable of 325,000 barrels would cause unnecessary water encroachment leading to physical waste was presented by E. V. Foran, petroleum engineer for the Texas Oil & Gas Conservation Association and C. V. Millikan, petroleum engineer, Amerada Petroleum Corporation, at the hearing here April 28, before the Texas Railroad Commission.

"Continuation of the present allowable," declared Mr. Millikan, "for 90 days or six months, should not materially damage the field. If any change is made, however, it should be a decrease."

The producing sand in the East Texas field is the eastern extremity of the Woodbine, Mr. Millikan pointed out, coming up on the Sabine Uplift. It is eroded off on the eastern side, and is some 200 feet thick on the western edge of the field. The producing portion of the sand on the western edge, however, is no thicker than that on the east, and the richest sand lies in the center of the field.

The water has moved eastward about one half mile in the Overton area, and has also come in around Gladewater. This water is the most important factor in production in the field, he stated, most of the gas being in solution and lacking the kinetic energy to lift the oil.

Lenses of shale interspersed in the producing sand offer no resistance to water intrusion, and any increase in production increases the differential between the water pressure and the gas pressure, which will reduce the ultimate yield of the territory.

Mr. Foran stated that there are numerous wells in the Gladewater area making water which formerly made pipe line oil. Each month these have increased in number along the west edge of the field.

These new water wells are at variable distances from the original water wells. The water, he explained, rises to the east following the bedding planes, and the migration is both vertical and lateral, the lateral movement being the more rapid.

At the present time, Foran said, water underlies between 40,000 and 50,000 acres of the producing area. This is a considerable increase in the last few months. It comes in for a distance of one to two miles from the west edge of the field, and unless there is an orderly displacement of this oil by the water, many more wells will be lost.

Excessive withdrawals in the eastern part of the field, he pointed out, will cause unequal water encroachment throughout the territory. This is the basic cause for treating the entire field as a unit. The present water hazard is aggravated by the disorderly withdrawals which took place before production was shut in under martial law.

More than 1000 wells have water within from four to 15 feet of the bottom of the hole.

He stated that the reservoir pressure should approximate the water pressure as nearly as possible to insure the greatest ultimate yield. The natural defficiency of gas can be compensated for by water displacement if this is done, and 75 per cent of the oil in the sand can be recovered by careful conservation of water and gas. If this is not done, the yield will fall below 50 per cent. The fact that the water is on one side of the field only requires lower withdrawals than if the water surrounded the field.

Want Meter Hearing

Carl Estes, Tyler, requested the commission to hold a hearing to determine whether or not meters should be placed in the field to prevent the "theft" of oil which is now being produced in excess of commission allowables. He quoted Luther Swift, commission supervisor in charge of the field, as saying that 15 to 20 per cent of the present production was oil in this class.

General Jacob F. Wolters, representing The Texas Company, approved Estes' request. He stated that he believed the commission should determine the facts, and that his company would welcome such a move if it were practical, as it would permit them to eliminate numerous gaugers now required to measure the oil.

Engineers present at the hearing, however, stated that there was at least 5 per cent error in the handling of such oil through meters. They contended that dead oil could be metered accurately, but that the gas in the oil in East Texas made such a move impractical.

C. V. Terrell, chairman of the commission, stated that they have considered such a move, and said that the commission would hold under advisement the question of setting a hearing.

F. W. Burford of the East Texas Refining Company sounded a warning note against the present practice of his company and other operators of pipe lines who take less than the commission allowable.

Stating that his company has 136 connections, 90 of which are on their own wells, he pointed out that they are taking only 62 barrels per well and that this may be cut to 52 barrels, as the anticipated spring demand for gasoline has failed to materialize.

He declared that this is causing distress oil to go on the market, and that last week one sale of 50,000 barrels was made in Gladewater at a price of 50 cents.

He explained that these unequal withdrawals not only result in the production of distress oil, but lead to unequal water encroachment resulting in physical waste.

R. E. Hardwicke, attorney for The Texas Oil & Gas Conservation Association, pointed out that the commission may not consider "market demand" in fixing proration allowables, and urged that testimony of this nature be excluded.

Earl Calloway of the Conservative Oil & Gas Company requested the commission to issue a rule requiring each operator to have a permit before cleaning their tanks and selling the "tank-bottom" oil. He declared that much good oil, which operators are later permitted to make up, is disposed of this way, causing further unequal withdrawals.

R. D. Parker, chief supervisor of oil and gas, stated that the commission was working on this problem already, and that no special rule would be required, as this was a question of proration.

Three changes in present field rules were presented by W. F. Knode, petroleum engineer for the commission.

Rule 2, on cementing is to be changed to eliminate the practice of two-stage cementing. Mr. Knode stated that this was being done, as there have been six failures out of 20 wells, which has caused pollution of the upper strata.

Rule 14 is to be amended to require each operator to turn in gas measurements to the commission on all wells at lease once each month.

Rule 24 is to be added, which will permit the commission to place lock stops and seals on feeder lines wherever they feel that such an action is advisable. This is intended to prevent some of the excess runs now taking place.

Central East Texas Field Operations

Completions

Company, Well and Location	Initial Production Bbls.	Depth
JOINER AREA—		
British-American Oil Prod. Co., Murphy (38-ac) 3	15,000	3675
E. L. Chapman et al, M. Johnson (18-ac) 1-B	11,000	3823
Golding-Murchison Oil Co., J. Lee (45½-ac) 2	8000	3786
Great Eastern Oil Co., E. B. Alford (10-ac) 2	3000	3735
Gulf Prod. Co., G. G. Turner (312-ac) 9	6500	3705
W. B. Hinton et al, H. Mayfield (94-ac) 3	9200	3758
Humble Oil & Ref. Co., C. Pilgreen (70-ac) 5	7000	3745
H. L. Hunt et al, W. P. Moore (82-ac) 4	8300	3640
R. J. Vinson (59-ac) 3	3000	3721
Smith Wilson 3	9000	3780
Kirby Pet. Co., J. Williams (65½-ac) 4	10,000	3746
C. H. Lyons et al, J. E. Arnold (11-ac) 2	3000	3748
Mid-Kansas O&G Co., D. Ledbetter (212-ac) 1	10,000	3648
E. E. Moores (182-ac) 11	4500	3648
M. L. Thompson (100-ac) 6	8000	3664
Mullins & Strickland, Brewer Cemetery 1	1200	3669
J. P. Perry (was R. L. Mayes) et al, H. P. Leverett (8-ac) 1	9000	3804
L. H. Pritchard et al, M. Giles 1	1500	3755
Sinclair Prairie Oil Co., W. T. Grissom (47-ac) 1	8500	3657
A. S. Jarvis (266-ac) 12-A	7500	3694
A. S. Jarvis (256-ac) 8-C	7500	3677
W. D. Kinney (117-ac) 12	8200	3632
W. D. Kinney (121-ac) 22	8100	3655
Mayfield (374-ac) 8-A	10,500	3798
Mayfield (374-ac) 10-A	9600	3780
Mayfield (374-ac) 14-A	10,500	3789
Mayfield (374-ac) 15-A	11,000	3747
Mayfield (149-ac) 8-B	7800	3619
E. E. Moore (97-ac) 1	5000	3745
Amanda Wiley (312-ac) 3	8500	3799
J. B. "Bunch" Wilson (65-ac) 4	10,000	3724
J. E. Stone-Imperator Oil Corp., School 1	10,000	3671
Sun Oil Co., H. A. Pace (643-ac) 3-B	3500	3732
The Texas Co., M. Blackwell (100-ac) 6	8500	3699
Trico Oil Co., Pinkston 1	6000	3644
Ward Oil Corp. et al, E. S. Thrash (200-ac) 10	7200	3822
Zion Oil Co. (was Alexander), L. S. Sartain (10-ac) 1	6000	3801½
KILGORE AREA—		
Amerada Pet. Corp., Christy Jenkins (50-ac) 2	10,500	3573
Artic Oil Co., R. H. Rowland (6½-ac) 1	2500	3592
Atlantic Oil Prod. Co., S. G. Andrews (110-ac) 6-A	7200	3599
F. A. Bates (was Harper-Neff) et al, M. T. Cole (40-ac) 2	4000	3555
Byrd & Frost, Inc., M. B. Hughey (105.4-ac) 5	10,000	3599
Central Commercial Oil Co., King-Shell (137-ac) 3	8000	3721
Everts Drl. Co.-Geo. I. McGee, Knights of Tabor (½-ac) 1	150	3766
Gulf Prod. Co., M. T. Cole (160-ac) 4	12,000	3533
G. W. Culver (244-ac) 7	9000	3554
W. Florence (147-ac) 10	9100	3715
S. Hilburn 16	7200	3529
S. Hilburn 17	8000	3529
S. Hilburn 18	10,000	3588
H. Sexton (165-ac) 2	8500	3672
Hamill Drl. Co.-Smith, M. Culp 1, Blk. 1	7500	3588
Humble O&R Co., H. Sexton (60-ac) 3-C	10,500	3765
Dora Thomas (59-ac) 8	6000	3608
Frank Hines (Kinsey-Trimble), Grif Davis (4-ac) 1	†	3630
Jas. B. Hughes (W. M. Pollock), A. A. King (9-ac) 2	13,000	3705
Island Oil Co., J. A. Knowles (16-ac) 2	8600	3611
Louisiana Oil Ref. Corp., W. M. Jernigan (110-ac) 3	9600	3622
Octagon Oil Co. (Searight-Hart), J. M. Blackman-Shell (107-ac) 3	7000	3643
Reagan & B. R. McLemore, H. Adkins (1½-ac) 1	9000	3700
Russell Pet. Corp., Morton-Dickson 1	1200	3582
Sam P. Shelburne et al, L. Martin-Gulf (60-ac) 2	8000	3758
Shell Pet. Corp., D. Carr (100-ac) 1	6000	3511
Sinclair Prairie Oil Co., M. T. Cole (666-ac) 17	2500	3673
Major Kennedy (1.4-ac) 2-B	2000	3711
A. A. Lockhart (87-ac) 4	10,000	3611
Vic C. Smith et al, M. B. Hughey (2-ac) 1	8000	3581
Snowden & McSweeney Co., R. H. Laird (133-ac) 8	11,000	3634
Sun Oil Co., Wm. Pentecost 131-ac) 2	9600	3631
Tidal Oil Co., Tom Bell (95-ac) 4	7000	3672
R. L. Wheelock & Collins, Wm. Clayton (73-ac) 4	7000	3603
Dick Wells (220-ac) 9	130	3761
LONGVIEW AREA—		
Abernathy & Kirkpatrick, A. B. Greyston (4.6-ac) 1	500	3578
Amerada Pet. Corp., Continental Bank (102.3-ac) 3	11,000	3600
L. R. Hearne (108-ac) 6	7500	3524
M. Killingsworth (100-ac) 6	12,000	3574
Atlantic Oil Prod. Co., S. S. Barton (46-ac) 3	8200	3691
Ethel Burnsides (204-ac) 6-A	9500	3545
G. A. Porter 5	6000	3704
Atlantic & J. K. Wadley, Joe Bander (84-ac) 2	9600	3666
M. Turner (161-ac) 4	8000	3623
Bay Oil Corp.-Tulsa Oil Co., Wm. Wheeler (49-ac) 2	12,000	3626
Big Indian Oil & Gas Co., W. R. Nicholson (26½-ac) 1	8000	3672
California Pet. Corp., W. F. Glenn (28-ac) 3	2200	3658
Clark-Cowden & McKinney, Wilhite (19-ac) 3	10,000	3641
Columbia O&G Co., W. M. Harley (45-ac) 2-A	10,500	3624
Cox & Jake Hamon, L. A. Rodden (110-ac) 3	11,000	3557
East Texas Ref. Co., P.C.C. Castleberry (40-ac) 2	9600	3619
Harry Edwards Drl. Co., J. W. Starr (12½-ac) 1	7000	3690
Empire Gas & Fuel Co., Joe Bander (93-ac) 4	8600	3640
J. C. Bumpas, (68-ac) 4	8500	3500
Aubrey Green (67-ac) 4	9000	3660
L. A. Jeter (121-ac) 6	4000	3595
J. L. Spurrier (52-ac) 2	11,000	3647
Fain-McGaha Oil Corp., A. Tooke (100-ac) 4	11,000	3636
Flemming & Kimbell Corp., J. Barnes (30-ac) 3	13,000	3688
Galvez Oil Corp., W. W. Holland (45-ac) 4	9000	3604
Gilcrease Oil Co., A. Tooke (29-ac) 2	6000	3603
Mike Glasscock et al, Bacle (5.97-ac) 1	8500	3635
S. A. Guiberson Oil Co., Stuckey-Thrasher (40-ac) 3	12,000	3631
Gulf Prod. Co., A. V. Bacle (69-ac) 2	8700	3631
Heyser & Heard, Guy Heineman (45-ac) 3	11,000	3683
Howard Pet. Corp., Mrs. Arch Davis (47-ac) 3	15,000	3628
Humble O&R Co., J. K. Edwards (270-ac) 14	3500	3675
W. H. Holland (245-ac) 8	10,000	3571
Della Johnson (57½-ac) 5-B	9500	3609
Eve O'Byrne (304-ac) 2-A	3000	3670
A. J. Watkins (75¾-ac) 2	7000	3675
Mary Wells (70.7-ac) 4	7000	3707
Jackson-Wise-Snedden, R. Corbin (40-ac) 2	12,000	3645
C. A. Lester & Duffield, J. I. Jones-Humble (122-ac) 1	6500	3763
Lucey Pet. Co., McHaney 3	12,000	3563
Magnolia Pet. Co., H. L. Foster (100-ac) 4	11,000	3584
R. B. White-Vacuum (88-ac) 7	9000	3530
H. B. Ziegler-Vacuum 4	10,000	3453
Meridian Pet. Corp., T. W. Lee (53-ac) 3	3000	3653
Mudge Oil Co., J. W. Free (113-ac) 6-A	9000	3665
A. D. Robinson et al, Leroy Rodden 3	9200	3593
Roeser-Pendleton, Inc., A. Christian (31-ac) 3	10,000	3617
Selby Oil & Gas Co.-Lewis Prod. Co., L. C. Ingram (80-ac) 7	15,000	3545
Snavely (361-ac) 16-B	11,000	3581
Shano Oil Co., S. D. Rodden (43-ac) 2	9000	3750
Shasta Oil Co., T. D. Campbell (56-ac) 5-A	8500	3674
Eddie Showers & W. A. Moncrief, J. M. Christian (4.33-ac) 1	9000	3605
Silver Star Oil Co., Pine Hill School (1-ac) 1	10,000	3595
Sinclair Prairie Oil Co., J. W. Akin (100-ac) 4	12,000	3573
E. L. Smith Oil Co., J. W. Harrison (15-ac) 2	11,000	3570
Stanolind O&G Co.-Simms Oil Co., Cox & Hamon (72-ac) 3	8800	3501
J. J. Flewellen (374-ac) 6-B	6500	3725
Harley 4	9500	3665
Peroy McGeorge (95-ac) 3	7000	3506
Sun Oil Co., John Hargraves (200-ac) 5	5000	3731
Superior Oil Co., H. Pritchard (99.56-ac) 3-A	8000	3563
Ward Oil Corp. (F. W. Merrick, Inc.), W. R. Nicholson (96-ac) 1	5000	3679
Yount-Lee Oil Co., Mrs. V. C. Calvin (62-ac) 4	10,000	3598
Floyd Jones (51-ac) 4	9600	3581
VAN FIELD—		
Pure Oil Co., N. E. Clark (84-ac) 8	7200	2940
P. E. Neills (86-ac) 2	1500	2970

Wildcat Drilling Report

(Wells shut down not included)

Completions

RUSK COUNTY—
Byrd & Frost, Inc.'s, Buckner 1.. † 4077

ANDERSON COUNTY — Roeser-Pendleton, Inc.'s, M. A. Davey 1, P. G. Adams sur, dk.

BOWIE COUNTY—Joe M. Burnham-Robinson & Greer's F. O. Weiss (949-ac) 1, J. Dean sur, dr shaley lime 1835 ft. W. S. Langford et al's W. W. Whybark (100-ac) 1, J. H. Dyer sur, sd 1790 ft.

CHEROKEE COUNTY — Harper-Parkinson et al's J. F. Lowery (139.6-ac) 1, C. B. Jennings sur, Pecan chalk 3250 ft, sd in chalk 3665 ft. C. M. Joiner Pet. Corp. & Harris' W. H. Martin (274.9-ac) 1, Daniel Parker sur, dk. Mustang Oil Co. et al's Decker (75-ac) 1, G. T. W. Fulgham sur, elev 457 ft, rig. Patten-Oliver & Murray's Eddie Toole (½-ac) 1, M. D. L. S. Coy sur, top Pecan chalk 2707 ft, dr 2770 ft. Wm. A. Stone et al (was Helen Clair Oil Co.'s) Mrs. M. B. Perkins (200-ac) 1, Thomas Sanford sur, dk. C. L. Tubbs et al's J. H. Sharp (3-ac) 1, M. D. L. S. Coy sur, rig.

DALLAS COUNTY—Long Creek Developing Co.'s T. C. Lupton (160-ac) 1, J. Johnson sur, running surface pipe 334 ft.

DELTA COUNTY—C. M. Joiner Pet. Corp. et al's J. A. Blackwell 1, H. Dunnetelle sur, dr shale 1085 ft.

ELLIS COUNTY—Armstrong Bros. et al's T. L. Reeves 1, Larkin Newton sur, cem cas 345 ft; Winn 1, E. Melton sur, replacing dk, 1430 ft. Carl Brooks et al's G. W. Golladay (50-ac) 1, N. C. Hilburn sur, reported show oil in sand 2318-2336 ft, lowering 5 3/16-inch cas to bottom. Worthen Pet. Co.'s M. Cerf 1-A, John Harris sur, spd.

FRANKLIN COUNTY—J. F. Mills-McGee & Harper's L. S. Harper (118-ac) 1, W. N. Dawson sur, dry sand at 2407-2447 ft, dr sandy shale 2545 ft.

LAMAR COUNTY—Doyle & Jondreau's L. Martin (132-ac) 1, Joseph Deck sur, dr 1655 ft. C. W. Davey et al's E. H. McCuistan (405-ac) 1, Kaleb Wood sur, Eagleford shale 1010-1390 ft, dry Woodbine sand 1670-1696 ft, Georgetown lime 1825-2120 ft, top Trinity series 2320 ft, anhydrite 2890-2900 ft, sd for fuel 3100 ft.

LEON COUNTY—Selzer Drilling Co.'s J. M. Blair (1235-ac) 1, L. Hibbard sur, dk.

MORRIS COUNTY—Buchanan & Burkhalter (was Fulwood & Buchanan also Leonard

Pet. Co.'s) Staggers (65-ac) 1, Forbes & Nelson sur, elev 370 ft, hard Pecan chalk 2526-3020 ft, base broken Pecan 3095 ft, Austin chalk 3483-3506 ft, cem 6⅝ cas 3506 ft, reported show oil unconfirmed, td 3519 ft.

RUSK COUNTY—Byrd & Frost, Inc., et al's Buckner (49-ac) 1, J. E. Peyton sur, jkd 4077 ft, jkd and skid rig. Harris & Russell's T. W. Harris (40-ac) 1, W. C. Davis sur, dk. Hathaway et al (was Laster Oil Co.'s) B. B. Gray (171-ac) 1, Js. McLean sur, elev 315 ft, Pecan chalk 2180-2537 ft, top Austin chalk 2980 ft, cored Georgetown lime 3196 ft, fsh drill stem 3415 ft. Murray & Goude Oil Co. (was John B. Gregory et al's) R. M. Leath (80-ac) 1, D. Clark sur, Pecan chalk 2600-2960 ft, Austin chalk 3422-3483 ft, logged hard sandy shale 3527-43 ft, top Georgetown lime between 3570-80 ft, td 3632 ft, making drill stem test. Moss et al's H. Matthews 1, D. Cartinas sur, elev 387 ft, dr chalk 3645 ft. Ross & Seward (was Cap Rock Oil Co.'s) L. T. Burton (125-ac) 1, J. J. Y'Barbo sur, elev 439 ft, base Pecan chalk 2905 ft, cored dry Blossom sand 3000-11 ft, fsh 3177 ft. Womack Oil Co.'s Arnold (128-ac) 1, Wm. Christian sur, elev 387 ft, gas sand 3677-89 ft.

SMITH COUNTY—C. B. Bunte et al's J. Adkinson 1, Calloway Dean sur, elev 377 ft, top broken Pecan chalk 2714 or 2720 ft, hard Pecan chalk 2740-3220 ft, dr shale 3755 ft.

TITUS COUNTY—Perry V. Cook et al (was C. B. Polk's) M. C. Rogers (1500-ac) 1, B. Moore sur, sd in shale 4125 ft.

UPSHUR COUNTY—J. C. McFarland-Phillips Dev. Co.'s Willie Starr (96-ac) 1, C. H. Cooper sur, elev 274 ft, Pecan chalk 2372-2888 ft, sd litigation 3500 ft.

WOOD COUNTY—Talko Pet. Co. et al's C. S. Ross (86-ac) 1, F. L. Smith sur, sd in shale 2770 ft.

East Texas Border Counties

Company, Well and Location	Initial Production Bbls.	Depth
PANOLA COUNTY—		
United Prod. Corp., Werner 12, B. C. Jordan sur.	¶13	2912
SHELBY COUNTY—		
Fuller & O'Brien Bros., Frost-Johnson 1, Aaron Castleberry sur, ...	*	2324

HARRISON COUNTY — Ryan Cons. Pet. Corp., J. M. Furrh 1, F. O'Neal sur, dk. Gauchee et al, T. W. Davidson 1, Richard Starr sur, elev 289 ft, PG 2388-2923 ft, coring 3710 ft. J. C. Peterbaugh, Collins 1, J. G. Pentecost sur, sp 10-inch cas 104 ft, dr 1840 ft. Triangle Drilling Co., Platt 1, F. C. Baker sur, (320-ac), lcn.

MARION COUNTY — Benedum & Trees, Bertha Tyler 1, Wm. Holloway sur, elev 236 ft, PG 2214-2760 ft, tested 14 fourbles sw in 25 min., 2973-3039 ft, coring shale 3446 ft. Baunauch Dev. Co., Miller 1, H. Fulgram sur, dr 3900 ft (est. depth). Nash et al, Henderson 1, G. L. Bledsoe sur (320-ac), dk.

PANOLA COUNTY—G. A. Davidson, Latham 1, Wm. Rich sur, coring lime, 2680 ft. Moses & Wallace, Daniels 1, Isabel Hanks sur, elev 297 ft (100-ac), sp 10-inch cas 85 ft. United Prod. Corp., Werner 12, B. C. Jordan sur, 7-inch 2784 ft, made 17,199,000 ft gas r.p. 1275 pounds, blew wild 24 hours, regauged 13 mil ft gas 975 pounds r. p., td 2912 ft. Nat. Gas Prod. Co., Allan Hawkins 1, J. Shadoin sur, cemtd 6⅝ cas 2826 ft, td 2830 ft.

SHELBY COUNTY—E. L. Chapman, Holt 2, Matthew Moore sur, claimed oil show, 6⅝ cas cemtd 3725 ft, drilled plug, took 7-ft core, wo td 3732 ft. E. L. Chapman, Pickering 2, D. S. Haight sur, dr 750 ft. K. H. Francis, Jno. Mims 1, Mary Smith sur, fsh 3382 ft. Fuller & O'Brien Bros., Frost-Johnson 1, Aaron Castleberry sur, PG 1486-2086 ft, dr shale 2156 ft. Sedberry et al's Pickering 1, Jane Stoddard sur, dr 400 ft. Oil News Pub. Co., Pickering 1, G. H. Patterson sur, wo, td 1543 ft. Wray & Dunbar, Hayden 1, D. T. F. Yordt sur, cemtd 12½ cas 156 ft, td 400 ft. McRobie et al, Windham 1, Wm. Leach sur, pulling cas, td 3399 ft. Ridgeway et al, Polley 1, Domingo Gonzales sur, 10-inch 140 ft, sd 465 ft, (sec-hole).

Permits for Texas Wells

ANDERSON COUNTY—W. T. Roeser, Ft. Worth, M. A. Davey, 106, 1, P. G. Adams sur, 990 ft from n and 450 ft from w line.

ARCHER COUNTY—Bridwell Oil Co., Wichita Falls, F. C. Green, 47, 7, J. Levins sur, 150 ft from s and 229 ft from w line.

BASTROP COUNTY — Campbell & Tong, San Antonio, A. Yoast, 46, 8, A. Garcia sur, 300 ft se of No. 7.

BEE COUNTY—The Texas Co., Houston, E. Gremmel, 353, 4, Jno. Pace sur, 450 ft sw of No. 3.

BEXAR COUNTY—E. M. Carl, San Antonio, F. Gembler, 83, 1, J. Montez sur, 160 ft from n and 750 ft from e line. Davis, Noble & Bender, San Antonio, San Ant. Farms, 65, 1, B 71, San Ant. Farms, 600 ft from n and 900 ft from e line.

BURLESON COUNTY — Sansom Oil Co., Inc., Dallas, J. H. Duckworth, 2460, 1, P. Singleton sur, se cor of Blk. 7.

CALLAHAN COUNTY—L. R. Terry et al, Putnam, F. E. Clark, 200, 1, S 305, S. P. Ry. sur, 150 ft from n and w lines. L. D. Priest et al, Abilene, Berry, 160, 1, Sec. 4, C&W sur, center. G. O. Kimmell, Wichita, Kans., Berry, 76, 1, S 79, Bayland Asy. sur, 150 ft from e and 450 ft from s line.

CALDWELL COUNTY — M. O. Rayor, Luling, Kruez, 100, 1, S. Shupe sur, 150 ft w of center of e line.

CRANE COUNTY—Continental Oil Co., Ft. Worth, Cowden, 160, D1, S 18, Blk. X, CCSD& RGNG sur, 2492 ft e and 200 ft from s line Sec.

DALLAS COUNTY—Long Creek Drilling Co., Dallas, T. C. Lupton, 160, 1, J. Johnson sur, 1320 ft from n and e lines.

DUVAL COUNTY—French Oil Corp., Laredo, F. Lopez, 330, 1, Sec. 731 sur, 1970 ft from e and 930 ft from s line.

EASTLAND COUNTY — A. J. Bartring, Ranger, Blackwell, 54, 1, T. W. House sur, 450 ft from n and 160 ft from w line.

FALLS COUNTY—O. B. Perot, Waco, J. L. Davis, 40, 1, P. Zarza sur, 150 ft from n and 200 ft from e line.

GREGG COUNTY—Ray & Miller, Dallas, F. Jones, 20, 3, W. H. Castleberry sur, 203 ft from e and 330 ft from s line. H. S. Moss, Dallas, F. Marshall, 39, 5, M. Van Winkle sur, 150 ft from n and w lines. Champlin & Bass, Inc., Tyler, Mattox, 24, 3, D. Sanchez sur, 165 ft from e and 150 ft from s line. R. V. Glasscock, Longview, G. Bacle, 6, 1, G. W. Hooper sur, center. F. W. O'Brien, Dallas, W. Daniels, 20, 3A, M. Van Winkle sur, 660 ft w of No. 1A. Hutchins & Crist, Tyler, M. T. Cole, 26, 2, A. Park sur, 330 ft from n and e lines; 1, 330 ft from n and w lines. Cox & Hamon, Ardmore, Okla., L. A. Rodden, 110, 10, J. R. Crosby sur, 330 ft from w and 442 ft from s line; Fee, 73, 6, J. Ruddle sur, 330 ft from w and 660 ft from s line. Everts Drilling Co., Dallas, O. Cook, 17, 1, G. F. Penn sur, 330 ft from s and 237 ft from w line. Navarro Oil Co., Houston, E. L. Walker, 30, 5, M. Dilard sur, 330 ft from w and 250 ft from s line. Columbia Oil & Gas Co., Dallas, C. J. Dollahite, 41, 2, D. Sanchez sur, 411 ft from n and 284 ft from w line. Bishop Corp., Dallas, E. G. Richey, 25, 3, C. Rhode sur, 911 ft from n and 436 ft from w line. Gregg Oil Co., Gladewater, T-P Ry., 2, 1, C. Rhode sur, center. Bass & Dillard, Wichita Falls, C. Christian, 2½, 1, G. W. Hooper sur, center. Danciger Oil & Ref. Co., Fort Worth, G. S. Mattox, 39, 2, D. Sanchez sur, 330 ft from s and w lines. J. H. Massie, Wichita Falls, J. W. Orr, 36, 4, H. H. Edwards sur, 550 ft n of No. 3. Tulsa Oil Co., Wichita, Kans., J. A. Knowles, 22, 1, Jno. Blair sur, 338 ft from w and 175 ft from s line. M. McDonald & Campbell, Dallas, J. W. Harrison, 15, 2, G. W. Hooper sur, 244 ft from n and 330 ft from e line. Jno. W. Harrold, Oklahoma City, Okla., J. M. England, 31, 3, M. Van Winkle sur, 350 ft from n and 543 ft from e line. C. M. Deckett, Longview, Z. S. Hilburn 10, 1, A. Norris sur, center. J. P. Wolverton, Chicasha, Okla., C. A. Lee, ½, 1, Gladewater sur, center. E. M. Jones, San Antonio, E. B. Wills, 41, 3, Wm. Chisum sur, 1178 ft w of No. 2. Lion Oil & Refg. Co., Eldorado, Ark., A. A. King, 20, 3, M. Van Winkle sur, 471 ft e of No. 1. .O B. Walters et al, Shreveport, La., J. A. Knowles, 8, 1, Jno. Blair sur, 177 ft from n and 330 ft from e line. Gordon Macmillan, Tyler, Geo. Jones, 10, 2, G. W. Hooper sur, 330 ft from n and 342 ft from w line. J. M. Davenport, Tyler, D. Bradford, 10, 1, J. Ximinez sur, (Rusk county). H. H. Holden, Tyler, E. Register, 12, 1, Penn & Baity sur, 131 ft from n and 300 ft from e line. T. H. McElvain, Longview, S. Hilburn, 10, 1, Hoy & Norris sur, center. H. W. Till, Marshall, S. Hilburn, 10, 1, J. Hoy sur, center. J. M. Lapin, Kilgore, J. A. Knowles 2, 1, M. Van Winkle sur, 150 ft from w and 135 ft from s line. Logan H. Bagby, Tyler, S. Kay, 5, 2, Gladewater sur, 116 ft from w and 52 ft from s line. Heyser & Heard, Dallas, Hineman, 45, 3, G. W. Hooper sur, 330 ft from n and w lines. Island Oil Co., Longview, J. A. Knowles, 17, 2, Jno. Blair sur, 330 ft from n and 210 ft from e line. Margay Oil Corp., Tulsa, Okla., R. Corbin, 55, 4, H. Edwards sur, 339 ft ne of No. 1. Iowa-Payne Oil Co., Marshall, R. Gray, 10, 1, M. Tenison sur, 273 ft from n and 330 ft from e line. Jas. M. Ross, Dallas, Fee, 6, 2, C. H. Alexander sur, 120 ft from n and 160 ft from w line. Whittle-Kavanaugh Corp., Houston, R. Brown, 32, 3, L. B. Outlaw sur, 126 ft from e and 330 ft from s line. H. R. Smith, Inc., Luling, W. A. Bouknight, 70, 5, H. H. Edwards sur, 330 ft from n and e lines. Invincible Oil Co., Gladewater, Weis, 66, 3, Armendaris sur, 1005 ft from n and 330 ft from w line. Thos. D. Humphrey, Tyler, A. Spear, 23, 5, M. Van Winkle sur, 113 ft from e and 80 ft from s line. Gulf Prod. Co., Houston, E. L. Walker, 49, 3, Jno. Tate sur, 609 ft sw of No. 1, W. Holt, 201, 8, Jno. Blair sur, 990 ft from n and 576 ft from e line; M. T. Cole, 161, 9, J. Meador sur, 330 ft from w and 1012 ft from s line; 6, 330 ft from s and 1586 ft from e line; 7, 330 ft from n and e lines; 8, 660 ft s of No. 2; C. Strong, 138, 3, J. Hoy sur, 330 ft from n and w lines; S. C. Fishburn, 200 8, F. W. Johnson sur, 330 ft from n and e lines; 10, 1970 ft from e and 836 ft from n line; T. C. Reeves, 80, 3, G. F. Penn sur, 1043 ft from n and 330 ft from w line; J. C. Judge, 518 9, F. W. Johnson sur, 1185 ft from e and 1647 ft from s line; W. Holt, 201, 9, Jno. Blair sur, 369 ft from w and 330 ft from s line. Kewanee Oil & Gas Co., Tulsa, Okla., Hampton, 168, 10, Geo. Hampton sur, 1448 ft from s and 330 ft from w line. Gilcrease Oil Co., Tulsa, Okla., A. Tooke, 31, 1, W. C. Wakeland sur, 521 ft from w and 330 ft from s line. Atlantic Oil Prod. Co., Dallas, R. Whaley, 71, 5, W. P. Chisum sur, 1225 ft from w and 150 ft from s line; M. B. Hughey, 105, 7, L. B. Outlaw sur, 1335 ft from n and 330 ft from w line; J. C. Judge, 520, 2, F. W. Johnson sur, 670 ft from n and 1545 ft from e line; 3, 1250 ft from n and 970 ft from e line; 4, 1875 ft from n and 970 ft from e line; W. M. Anderson, 83, 5, J. Ruddle sur, 385 ft from e and 330 ft from n line; R. C. Barnwell, C, 51, 3, McAnally sur, 330 ft from n and 990 ft from e line; M. Hays, 207, 6, W. C. Alvice sur, 2024 ft from n and 187 ft from e line; J. W. Bacle, 30, 3, G. W. Hooper sur, 409 ft from w and 158 ft from s line; J. Wilson, 101, 7, W. C. Wakeland sur, 330 ft from e and 990 ft from s line; M. Turner, 162, 10, W. C. Wakeland sur, 330 ft from s and w lines. Amerada Pet. Corp., Fort Worth, A. Tooke, 60, 5, W. G. Painter sur, 450 ft from n and 330 ft from w line; 4, 330 ft from n and e lines. Sun Oil Co., Dallas, M. Strong, 50, 1, Jno. Blair sur, 350 ft from w and 200 ft from s line; 2, 330 ft from s and e lines; 3, 330 ft from n and 300 ft from w line; G. Reese, 124, 5, J. Hoy sur, 330 ft from e and 990 ft from s line; G. W. Tate, 64, 6, W. H. Castleberry sur, 330 ft from w and 250 ft from

s line; J. W. Akin, 163, 7, Thompson & Painter sur, 1320 ft e of No. 1. California Pet. Corp., Shreveport, La., W. M. Clements, 58, 5, M. Mann sur, 330 ft from n and e lines. Texas Co., Shreveport, La., R. B. Wells, 104, 5, M. Tenison sur, 270 ft from n and 330 ft from w line. Humble Oil & Refg. Co., Houston, W. W. Holland, 201, 9, T. Allen sur, 249 ft from w and 257 ft from s line; H. M. Lawrence, 165, 7, D. Ferguson sur, 330 ft from w and 943 ft from s line; W. R. Hughes, 185, 8, D. Sanchez sur, 1725 ft from e and 422 ft from s line; J. K. Edwards, 200, 16, D. Ferguson sur, 990 ft from n and 330 ft from e line. Tidal Oil Co., Fort Worth, M. B. Hughey, 200, 10, J. Hilliard sur, 914 ft from n and 513 ft from e line; 9, 914 ft from n and 1173 ft from e line; J. J. Castleberry, 202, 10, D. Sanchez sur, 704 ft from w and 1267 ft from s line; E. R. D. Bivins, 202, 10, W. P. Chisum sur, 1785 ft from n and 982 ft from e line; Lake Devernia, 270, 9, Painter & Hart sur, 1850 ft from w and 1950 ft from s line; M. B. Hughey, 200, 6, Jas. Hilliard sur, 1320 ft from w and 824 ft from n line; 8, 2640 ft from w and 914 ft from n line; 7, 1980 ft from w and 824 ft from n line; M. G. Barton, 194, 10, S. P. Hollingsworth sur, 1350 ft from n and 1130 ft from e line; 9, 1350 ft from n and 1930 ft from e line; J. J. Castleberry 202, 11, D. Sanchez sur, 330 ft from n and e lines. Sinclair Oil & Gas Co., Fort Worth, A. A. King, B, 337, 9, A. Cormack sur, 590 ft from w and 330 ft from s line; 12, 900 ft ne of No. 11; M. T. Cole, 666, 19, S. Brooks sur, 1083 ft from n and 230 ft from e line. Shell Pet. Corp., Dallas, G. H. Slaton, 123, 6, G. W. Hooper sur, 330 ft from n and w lines; B. Moore, 50, 2, J. Mosely sur, 350 ft from n and 330 ft from e line; J. Moore, 369, 7, F. W. Johnson sur, 424 ft from n and 1240 ft from w line; H. T. Neal, 41, 4, M. Van Winkle sur, 345 ft w of No. 1. Empire Gas & Fuel Co., Fort Worth, Shreveport, La., E. L. Walker, 160, 1, Jno. Tate sur, 400 ft from s and 220 ft from e line; J. C. Bumpas, 68, 5, W. H. Castleberry sur, 330 ft from s and 1017 ft from e line; L. A. Jeter, 121, 8, J. R. Crosby sur, 675 ft from w and 330 ft from n line. Magnolia Pet. Co., Dallas, A. Hicks, 99, 5, D. Dainwood sur, 105 ft from n and 103 ft from w line; H. L. Foster, 100, 6, W. C. Wakeland sur, 660 ft n of No. 4; H. B. Zeigler, 120, 6, F. McAnally sur, 330 ft from n and w lines. Yount-Lee Oil Co., Beaumont, J. C. McKinley, B, 84, 6, D. Sanchez sur, 150 ft from w and 710 ft from n line; S. G. Smith, C., 56, 3, Wm. Castleberry sur, 324 ft from s and 330 ft from w line. Stanolind Oil & Gas Co., Longview, J. H. Boles, 30, 3, H. H. Edwards sur, 930 ft from n and 376 ft from w line; M. B. Harley, C, 41, 3, G. W. Hooper sur, 330 ft from n and w lines.

GALVESTON COUNTY — Yount-Lee Oil Co., Beaumont, Cade, 28, N. Fitzsimmons sur, 2395 ft from n and 1460 ft from e line.

GRAY COUNTY — Claude Drilling Co., Pampa, B. F. A. Byrum, 80, 1, S 188, B 3, I&GN sur, 330 ft from n and w lines ne¼. Elbar Corp., Ada, Okla., E. E. Gethings, 160, 1, S 13, B A9, H&GN sur, 330 ft from s and e lines ne¼.

HARDIN COUNTY — Rio Bravo Oil Co., Houston, Fee, 158, C 135A, J. F. Cotton sur, 180 ft e of No. 130A. Ada Belle Oil Co., Batson, Gulf, 6, 151, F. H. Green sur, 50 ft from s and 28 ft from w line; Texas-Weiss, 6, 152, Blk. C, F. H. Green sur, 48 ft from n and 30 ft from w line.

HARRIS COUNTY — Texas Co., Houston, Wheeler-Pickens, 100, 24, J. B. Stevenson sur, 50 ft from s and w lines of Blk. 24. Framar Oil & Gas Corp., Houston, Minnetex, 5, 2, W. J. Lovett sur, sw cor of Blk. 251; O. P. Woodburn, 640, 1, A. Whitlock sur, nw corner.

LOVING COUNTY — Eppenauer Drilling Co., San Angelo, Hamill-Ellis, 30, 1, S 92, Blk. 1, 410 ft from w and 330 ft from s line.

McLENNAN COUNTY—M. C. Hodges, Ft. Worth, J. T. Chapman, 40, 1, T. Vega sur, 210 ft from s and w lines. J. W. Simms, Oklahoma City, Okla., J. W. Mann, 90, 1, O. Campo sur, 101 vs from n and 437 vs from e line. J. B. Evers, Waco, C. L. Watson, 295, 4, T. Vega sur, 1000 ft from w and 600 ft from n line.

MATAGORDA COUNTY—Texas Co., Houston, Fee, 31, 1, Wm. Hadden sur, 50 ft from n and e lines.

NUECES COUNTY—V. B. Hillegeist, Corpus Christi, McGregor, 73, 1, No. 311 sur, 150 ft from w and 330 ft from s line.

POTTER CONUTY—Red River Gas Co., Amarillo, Bivins, A, 480, 7, S 38, B M20, G&M sur, center of sw¼.

RUSK COUNTY — Shasta Oil Co., Longview, R. Pool, 10, 2, M. J. Pru sur, 204 ft from n and 266 ft from w line. Deep Rock Oil Co., Tulsa, Okla., T. J. Stovall, 196, 6, J. B. Cadena sur, 150 ft from n and 862 ft from e line. East Texas Oil & Refg. Co., Dallas, C. Barksdale, 15, 2, M. J. Pru sur, 238 ft from e and 206 ft from n line. Martin & Cockburn, Overton, J. Cansler, 41, 3, E. Collard sur, 320 ft from n and 271 ft from w line; C. H. McDonald, Mt. Pleasant, J. H. Stewart, 2½, 1, Jno. Womack sur, 162 ft from n and 156 ft from e line. J. M. Davenport, Tyler, D. Bradford, 10, 1, J. Ximinez sur, 330 ft from n and 237 ft from w line. Blackwell Oil & Gas Co., Kilgore, W. P. Moore, 33, 6, M. J. Pru sur, 332 ft from n and 230 ft from e line. Golding-Murchison Oil Co., Dallas, R. W. Fair, 100, 7, M. J. Pru sur, 330 ft from e and 1817 ft from n line. Butler & Clark, Henderson, G. W. Tips, 94, 1, H. M. Smith sur, 700 ft from w and 186 ft from s line. Adams & Rowe, Inc., Shreveport, La., J. E. Arnold, 9, 2, M. J. Pru sur, 236 ft from w and 316 ft from s line. E. M. Jones, San Antonio,B. F. Hindman, 21, 3, R. W. Smith sur, 180 ft from n and 330 ft from w line. C. L. McMahon, Tulsa, Okla., Finney, 22, 3, J. Ximinez sur, 330 ft from n and 307 ft from w line. Pilot Oil Co., Dallas, A. P. Finney, 40, 4, J. Ximinez sur, 330 ft from n and w lines. Abercrombie & Harrison, Houston, W. J. Brightwell, A, 15, 2, R. E. Winn sur, 450 ft from n and 266 ft from w line. Vernon Howze, Tyler, E. B. Alford, 5, 1, B 35, T. J. Moore sur, center. M. H. McMurrey, Henderson, S. Stone, 10, 2, M. J. Pru sur, 200 ft from w and 250 ft from s line. Manahan Oil Co., Tulsa, Okla., A. J. Deason, 10, 2, Pru & Ximinez sur, 246 ft from w and 170 ft from s line. Great Eastern Oil Co., Dallas, C. O. Christian, 6, 2, J. S. Whiteman sur, 330 ft from w and 159 ft from s line. Eysenbach & Jackson, Dallas, D. Florence, 145, 1, J. English sur, 330 ft from s and e lines. Jim Cloud, Inc., Dallas, W. F. Neal, 109, 5, J. Lindley sur, 420 ft from w and 330 ft from s line; 4, 195 ft from nw and 224 ft from ne line. Tidal Oil Co., Fort Worth, L. J. Pinkston, 134, 8, E. Collard sur, 1088 ft from e and 330 ft from s line. Humble Oil & Ref. Co., Houston, E. S. Holt, 25, 2, F. Cordova sur, 450 ft from n and 330 ft from w line; J. E. B. Snead, 104 3, A. Melton sur, 360 ft from w and 516 ft from s line; O. Roberson, 57, 1, D. Clark sur, 330 ft from n and 134 ft from w line; L. Hill, 60, 2, Geo. Berry sur, 330 ft from n and 360 ft from e line; H. Sexton, 168, B 5, M. McCabe sur, 330 ft from n and 990 ft from w line; R. E. L. Silvey, B, 209, 5, T. J. Martin sur, 1225 ft from w and 330 ft from s line. Sinclair Oil & Gas Co., Fort Worth, Mayfield, B, 149, 9, J. B. Cadena sur, 1298 ft from s and 1100 ft from e line; D. Ledbetter, 191, 3, W. D. Porter sur, 330 ft from n and w lines; D. Ledbetter, 202, 4, T. M. White sur, 330 ft from e and 1170 ft from s line; W. D. Kinney, 579, 23, J. B. Cadena sur, 330 ft from s and e lines of Blk. 29. Gulf Prod. Co., Houston, J. B. Irwin, 35, 2, J. Lindley sur, 661 ft from w and 309 ft from n line; Mayfield, D. 54, 3, J. B. Cadena sur, 330 ft from s and w lines; Mayfield, C, 103, 4, J. B. Cadena sur, 330 ft from n and w lines. Texas Co., Shreveport, La., First State Bank, 160, 7, J. C. Smith sur, 330 ft from e and 1400 ft from s line; 8, 330 ft from s and e lines. Mid-Kansas Oil & Gas Co., Shreveport, La., H. C. Burton, 61, 2, W. D. Porter sur, 330 ft from s and e lines; J. Lunsford, 70, 2, J. B. Cadena sur, 77 ft from e and 330 ft from s line. Stanolind Oil &Gas Co., Fort Worth, C. O. Christian, 100, 6, W. R. Cooke sur, 698 ft from w and 198 ft from s line; R. A. Moores, 251, 3, J. B. Cadena sur, 330 ft from s and w lines; 4, 330 ft from n and w lines.

SMITH COUNTY — C. K. West, Tyler, L. S. Sartain, 21, 1, Jas. Jordan sur, 330 ft from e and 231 ft from s line. Nash & Strickland, Henderson, T. O. Wright, 6, 2, J. Vargas sur, 150 ft from s and e lines. Sutton & Hawkins, Tyler, M. E. Church, 8, 1, Jas. Jordan sur, 330 ft from n and w lines. McMahon, McCulloch & Moore, Tulsa, Okla., S. S. Cook, 39, 3, Jas. Jordan sur, 164 ft from n and 330 ft from w line. R. L. Mayes, 25, 1, E. Daniel sur, 330 ft from s and e lines. Texas Co., Shreveport, La., A. S. Jarvis, 161, A5, M. S. Coy sur, 330 ft from w and 930 ft from s line. Sinclair Oil & Gas Co., Fort Worth, Mayfield, A, 374, 16, Jas. Jordan sur, 2295 ft from e and 330 ft from s line; 12, 2556 ft from w and 330 ft from s line; B. Wilson, 65, 2, Jas Jordan sur, 330 ft from s and e lines; E. E. Moore, 103, 2, Jas. Jordan sur, 1422 ft from n and 330 ft from e line; A. S. Jarvis, C, 256, 9, M. S. Coy sur, 990 ft from n and 1836 ft from w line; A. Wiley, 310, 4, Jas. Jordan sur, 330 ft from s and e lines.

SHACKELFORD COUNTY—Dickey Bros., Albany, E. Webb, 320, 7, 576 TE&L sur, 1800 ft from nw and 890 ft from ne line. C. C. Pratt, Mineral Wells, Clarke, 40, 9, S 2, Blind Asy. sur, 220 ft from e and 415 ft from s line. Grisham-Hunter Corp., Abilene, D. Ward, 120, 2, S 3, Bayland Asy. sur, 150 ft from n and e lines.

STARR COUNTY—T. C. Patten, Rio Grande City, Kelsey-Bass, 40, 1, S 8, Por. 75-76-77, 365 ft from n and 150 ft from w line. Coastal Oil & Gas Co., Inc., McAllen, Kelsey-Bass, 1280, 1, S 2, Por. 86, Carmargo sur, 2747 ft from w and 1547 ft from n line.

THROCKMORTON COUNTY—Toucan Oil Co., Woodson, A. B. Callahan, 60, 1, 687 TE&L sur, 750 ft from n and 830 ft from w line. Falls Prod. Co., Wichita Falls, J. H. Lee, 80, 2, 2202 TE&L sur, 1100 ft ne of No. 1.

UPSHUR COUNTY — Manson Oil Co., Chicasha, Okla., T. A. Webb, 34, 4, G. W. Hooper sur, 330 ft from n and e lines. Shano Oil Co., Longview, B. Doby, 43, 3, M. Mann sur, 330 ft from s and w lines. W. M. Norris, Fort Worth, J. B. Webb, 10, 2, G. W. Hooper sur, 289 ft from n and 300 ft from e line. Peckham Oil Co., Tyler, T. Wells, 40, 3, G. W. Hooper sur, 330 ft from s and e lines. Texnia Oil Co., Tyler, J. W. Free, 28, 2, G. W. Hooper sur, 330 ft from n and e lines. C. L. Wickliffe, Tyler, W. E. Florence, 41, 1, M. Chandler sur, 960 ft from w and 330 ft from s line. Lester & Duffield, Fort Worth, J. T. Jones, 120, 2, Wm. King sur, 334 ft from w and 330 ft from s line. Mudge Oil Co., Tyler, J. W. Free, 8, B1, D. Ferguson sur, 192 ft from n and 332 ft from e line; J. D. Richardson, 92, 3, D. Ferguson sur, 330 ft from s and w lines. Sun Oil Co., Dallas, T. C. Ramey, 90, 4, Wm. King sur, 233 ft from e and 590 ft from s line. Humble Oil & Ref. Co., Houston, G. W. Johnson, 102, 7, G. W. Hooper sur, 330 ft from w and 828 ft from s line; E. O'Byrne, B, 225, 3, D. Ferguson sur, 330 ft from w and 990 ft from s line; J. M. Smith, 90, 2, J. M. Pineda sur, 435 ft from n and 1505 ft from e line.

VAN ZANDT COUNTY—Pure Oil Co., Ft. Worth, W. H. Cook, 117, 8, M. Gross sur, 190 ft n of center of s line. Mrs. C. White, 45, 2, J. Walling sur, 690 ft from w and 250 ft from n line. D. R. Howell, 60, 4, H. V. Moore sur, 667 ft from n and 650 ft from w line. L. M. Brawner, 148, 5, J. Walling sur, 1572 ft from w and 220 ft from n line. D. F. Cade, 28, 1, N.C.S.L. sur, 150 ft from s and e lines. J. F. Crim, 40, 3, J. Walling sur, 250 ft from n and 200 ft from e line.

WICHITA COUNTY—F. C. Baldwin et al, Fort Worth, G. L. Dobie, 55, 5, DL&C sur, 475 ft from n and e lines. Jno. L. Swanner, Wichita Falls, Williams-Parker, 160, 6, B 15, Cowherd sur, 800 ft from w and 1295 ft from s line. R. R. Clark et al, Wichita Falls, J. F. Bickley, 400, 19, S 2, C&M sur, 900 ft from n and 988 ft from e line.

WARD COUNTY—J. D. Kugle, Dallas, Keasler, 320, 1, S 46, B 34, H&TC sur, 330 ft from n and e lines.

WEBB COUNTY — Phillip Rosenburg, Laredo, D. Green, 600, 2, S 233, 450 ft from e and 245 ft from s line. (Corrected Location). Laurel, 40, 1, S 271, B 10, 291 ft from n and e lines. Ros Amigos Oil Co., Laredo, E. Garcia, 40, 1, S 592, B 46, Los Ojuelos sur, 450 ft from n and e lines.

ZAPATA COUNTY — Texas Co., Houston, Jennings, 8, C. Blanco sur, 150 ft nw of center of se line. Petroleum Royalty Corp., Houston, G. Garcia, 1066, 1, C. Redondo sur, 957 ft nw and 2922 ft from sw line. McGinley Corp. & Carr, Laredo, G. T. Montemayor, 40, 1, S 64, B 2, 150 ft from n and w lines. McGinley Corp., Laredo, J. Bustamente, 106, 1, No. 35, J. Fansler sur, 150 ft from nw and 1200 ft from ne line.

NORTH and WEST TEXAS

Big Lake Allowable Below Contract Commitments
Another Spurt in Wildcat Work in Archer County

H. H. KING, *Staff Representative, Fort Worth, Texas*

Commission Allows Big Lake 175,000 Barrels Per Week

AUSTIN, TEXAS, APRIL 28.

Big Lake field, Reagan County, was given a maximum allowance of 25,000 barrels daily under an order issued Thrusday by the Texas Railroad Commission. The order specifies that more oil can be produced in one day, but that the weekly average shall not exceed 25,000 barrels per day.

The two producing companies sharing in the production of the Big Lake field have crude contracts in effect that exceed the 25,000 barrels daily maximum quota allocated the field by the Commission. Big Lake Oil Company and Group One Oil Corporation (Continental Oil Company) have a contract calling for the delivery of a maximum of 10,000 barrels daily each, if available, with Reagan County Purchasing Company, Inc., which in turn has sold this quantity of oil to Humble Oil & Refining Company on contract that remains in effect until April 1, 1940.

Big Lake Oil Company also has contracted to sell 5000 barrels daily to Republic Oil Refining Company, owner of refinery at Texas City, and from 3000 to 5000 barrels daily to The Texas Company, making a total of 28,000 barrels as the minimum committments.

The University of Texas receives a one-eighth royalty from oil and gas sold from the field.

Actual production in the field has been slightly under the new quota lately due to workover operations on several of the deep wells, and during this period the operators are making up the deficit on contracted sales by drawing on storage set aside for such a purpose.

The commission further ordered that "The operators shall, as quickly as possible, carry to completion the recommendation to the commission which were made by its engineer, W. F. Knode, under date March 19, 1932, and shown in the record of the hearing mentioned, which recommendations relate, among other things, to the killing and reconditioning of certain wells, the method for reducing gas-oil ratio, the prevention of premature water encroachment, and methods to be used in setting casing and tubing.

"W. F. Knode is hereby appointed Umpire for said field and instructed to see that this order is faithfully carried out. If in the completion or reconditioning of any well or wells, unforeseen conditions arise which unavoidably cause an increase in production above the average as fixed herein, and which cannot be limited without causing waste, said Umpire is instructed, as an emergency measure, to authorize such excess production, but shall report to the commission the facts, and this case shall be kept open on the docket for such further orders as may be necessary to control the production to prevent waste of oil and gas."

Archer County Wildcat Activity Given Boost

Wichita Falls, Texas.—Field activity in vicinity of Archer County wildcat strike made late in March by J. J. Perkins-L. H. Cullum et al's C. L. Abercrombie 1, Section 157, Harris sub-division, was given added impetus last week when an oil sand was uncovered at a slightly deeper horizon than the discovery well. O. T. Anderson et al's Abercrombie 1, NEc SW of south 336.2-acre tract, Section 157, and a south offset to the discovery well, showed for a small pumper in soft saturated lime at 1194-1206 feet, which furnished a 40-barrel pumper in the discovery. In view of this disappointment Anderson and associates deepened the hole and cored saturated sand immediately below the lime at 1207-1210 feet, with a surface elevation of 1003 feet, and have a well in the making rated at 150 to 200 barrels daily.

Perkins-Cullum et al's Abercrombie 1-A, an offset to their discovery well, was rated at 50 barrels in lime at 1188-1195 feet, with surface elevation of 1004 feet. The hole was deepened through thin layers of shale and hard lime into saturated sand at 1215-1220 feet, with a good well now assured. The area was slated for an active development program in the lime, and the presence of a sand horizon materially enhances the production possibilities.

A prolonged workover job conducted by Lindsay Drilling Company (was Deep Oil Development Company) in Wilson 1, lease 5-A, assures a pumper in the Strawn horizon at 3614-3638 feet. This well is a west offset to the discovery well of the Chalk Hill pool's Canyon lime production, and was carried to 5750 feet to comply with lease contract. Water has been successfully shut off after cementing and partially re-drilling three times, and the oil is standing about 1500 feet in the hole while preparations are under way to pump.

Lindsay Drilling Company's Wilson 2 is the next scheduled completion in the Chalk Hill pool, having logged sand at 2193-2196 feet, and shut down in saturated lime at 2197 feet to cement 8¼-inch pipe at 2192 feet before drilling in.

North and West Texas Field Developments

Completions

Company, Well and Location	Initial Production Bbls.	Depth
ARCHER COUNTY—		
Cullum & Alexander, Fain-McGaha-Falls Co. 1, Blk. 16	*	1195
Falls County 3-B	55	1114
Falls County 4-B	65	1107
Fain-McGaha Oil Corp., Fee 1	110	1791
J. H. Krahenbuhl et al, Harris 1	*	1454
W. E. Maxson, Jr. et al, F. C. Green 13-B	70	1139
W. B. Omohundro et al, Turbeville 3-A	*	1470
Turbeville 1-C	*	1451
J. J. Perkins & Cullum, Titkin-Falls Co. 6	65	1115
Titkin-Falls Co. 7	55	1111
BAYLOR COUNTY—		
W. H. Heinzerling et al, Mrs. G. E. Blackman 1	*	1057
JACK COUNTY—		
Wayne H. Hammon et al, Booth 2	25	2917
WICHITA COUNTY—		
Tom F. Hunter et al, Waggoner 2-H	30	1697
YOUNG COUNTY—		
Arcadia Refining Co., S. R. Jeffery 1, Sec. 47	*	898
Bolin & Lindsey, Wolfe 1, Sec. 165	15	885
R. S. Boling et al, Boyd 1, Sec. 1447	*	852
Cable Oil Co., Williams 1	20	579
Amon G. Carter et al, Railroad Fee 1	*	3865
Iron Mountain Oil Co., Tatum 5, Sec. 1908	40	659
Kleiner & Riggs, Larrimore 7-B, Sec. 22	40	710
Larrimore 8-B, Sec. 22	35	717
W. Newt Maer et al, Cark 1, Sec. 208	*	840
Geo. Mollenkopf et al, Jeffreys 1, Sec. 52	*	940
C. C. Williams et al, Bishop 1, Sec. 1444	*	765
Wooten & Reed, Swain 3, Sec. 1465	65	694

WEST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
HOWARD COUNTY—		
Group 1 Oil Corp.-Continental Oil Co., G. W. Overton 4	350	2245
LOVING COUNTY—		
Slack et al, W. B. Lind 1	35	4268
WARD COUNTY—		
Abell Bros. et al, S. S. Owens-Shell 1	80	2490

SOUTH TEXAS

Another Field Opened in McMullen County
Rose Field Opener in Luling Area Successfully Completed

EARL POST, *Staff Representative, San Antonio*

Bring in New Luling Field After Everything Is All Set

San Antonio, Texas.—Bob Rose definitely opened a new oil producing area in Caldwell County, two miles northeast of Luling and midway between the Salt Flat and Luling fields when J. M. Pierce 1 came in April 26 at 4 a. m. for an initial flow of 226 barrels an hour. The well topped the Austin chalk at 2050 feet and was believed to have gone into a crevice at 2114 feet.

This well is located 150 feet from the south and west lines of a 40-acre tract in the Solomon Seal Survey and 150 feet northeast of the Luling-Seguin Highway. This is the only acreage immediately surrounding the well now under lease to Rose.

The well blew in unexpectedly March 30 and sprayed oil for several hundred feet around the derrick before finally bridging over. The bridge held 39 joints of drill stem in the hole, which has been the main difficulty in bringing the well in under control. The drill stem finally was removed and 6⅝-inch casing run to 1946 feet.

A small pipe line was run from the well to the concern's Luling refinery, some 2½ miles away before the plugs were drilled out. When everything was in readiness, including connections to the pipe line, the well was completed in perfect order. The first hour's open flow was recorded at 226 barrels. It, however, showed an increase to better than 300 barrels an hour and then began a slight decline. It was choked down and on April 28, the well was flowing at the rate of about 140 barrels an hour and likely would be further choked to reduce the flow.

The oil tests 38.5 gravity, corrected, nearly twice as high as the old Luling field and several points higher than either Darst Creek or Salt Flat.

Sharing honors with Bob Rose, C. J. Webster Oil & Gas Company was bringing in another important discovery in Caldwell County. It is the W. W. McCrory 1, 7½ miles southeast of Lockhart and about 12 miles northeast of Rose's producer. The well topped the Edwards lime at 2278, set 6⅝-inch casing slightly shallower and on April 25, drilled in. The test was cored a slight bit too deep into the Edwards lime, owners declare, and was showing several hundred barrels of sulphur water along with about 60 or 70 barrels of oil. The total depth is believed to be 2281 feet, while it was intended to take only one foot of the formation. The well was being plugged back April 28 and would be back on production over the week-end.

The exact location of the well is 600 feet west of the southwest corner of the Abe Luce 54-acre tract in the northeast corner of the McCrory 110-acre tract, McNeil Survey. It is an important wildcat about midway between the Branyon and Buchanan pools.

Another test attracting considerable attention is Bob Rose's Walker 1, three-fourths of a mile northeast of Rose's Pierce well. This test got the top of the chalk at 2120 feet, where it was dry. The base of the chalk was encountered at 2300 feet and the top of the Buda at 2330 feet. The well was drilling around 2440 feet at last reports and was due to shortly encounter the top of the Edwards lime, its goal.

Victoria County Discovery Well Drilling Deeper

San Antonio, Texas.—Humble Oil & Refining Company's M. V. O'Conner 2, J. Keating survey, slightly more than 1000 feet northwest of the O'Conner 1, is drilling at 3585 feet. O'Conner 1, which opened a new field on the Victoria County line in November of last year at 4139-55 feet, is drilling deeper after having trouble in the producing

Another Wildcat Promises Extension in Duval County

San Antonio, Texas.—Another Duval County wildcat, 1¼ miles south of the recently completed Capps and Smith producer, loomed as a producer late in the week as preparations were being made to drill out plugs. It is John F. Camp's Weil 1, located in Section 570, which topped the sand at 2430 feet and drilled to 2438 feet. Several drill stem tests were attempted, but none were of avail. The core was so promising, however, that casing was set.

Bob Rose's Pierce 1 which opens a new field between Luling and Salt Flat in Caldwell County.

On April 17, Capps and Smith's Duval Ranch Lands 1, Section 576, blew in as a 40,000,000-cubic foot gasser from 2412 feet. It showed for a small producer at 2350-55 feet, but was cored deeper, showing layers of sand and shale to bottom. The Capps and Smith well is a slight bit more than two miles southwest of the prolific Government Wells field and on the same strike line.

This area becomes intensely interesting since the Government Wells field consists of several separate producing areas, together with a couple more pools to the south and another new one to the north. As a result of the recent strikes, the entire main producing area, composing its separate producing spots, is more than 10 miles long.

In the Rosita area, north of the main Government Wells field, J. S. Suttle's L. Bennett 1, Section 44, tested 15 trebbles of salt water in eight minutes from 1603-05 feet. It is one-half mile east of the Seacord and Putnam well, which made a fairly large gasser at this level.

Laurence Jacob (left) and Walter J. Buzzini (right) watching Jacob 1 flow.

sand. It was around 4185 feet at last report.

Across the line in Victoria County, The Texas Company was still trying to recover tools from A. M. McFadden 4, J. M. Rine survey, which had a blowout at 2840 feet and bridged over. It is 2800 feet north of McFadden 3, an oil producer.

Farther northeast on the same trend, T. B. Slick Estate's McFadden 2, J. Varin survey, 3500 feet north of production, got a second sand. This was at 3929-39 feet, where it tested 500 pounds pressure in four minutes on a drill stem test. It showed some mud and oil. It is now drilling in hard rock at 4097 feet.

These showings are true to form with deeper wells drilled to below 5000 feet in the McFadden area and further indicates a large oil producing area.

San Antonio, Texas.—Slick-Seeligson, Inc., has set casing in Allen 2 in the Slick pool, northern Goliad County, over a showing encountered at 4198-4213 feet. It is showing for a good producer. The well tested 500 pounds pressure in eight minutes through two quarter-inch chokes on a drill stem test. Considerable oil was present.

The well is in the Obid Marshall Survey, approximately 1330 feet southwest of Allen 1 and about 1000 feet due south of the same operator's Poetter 1, discovery well. Both wells are producers from the 4200-foot sand, which is regarded as the Pettus producing horizon in the Jackson series.

Good Prospect for Another McMullen County Pool

San Antonio, Texas.—Further definition of the Pettus trend from the Slick pool in Goliad County into the Mirando district was proven April 24 by completion of a 150-barrel wildcat by Jacob, Buzzini and Pickett, Inc., in McMullen County. The well is Jacob 2, 150 feet northwest of Jacob 1, W. H. Jacob Survey No. 8, five miles north of the Calliham field and south of the Crowther field.

This test showed a series of seashells and sand and solid sand from 948 to 962 feet, its total depth. Casing is set to the top of the sand and a perforated liner to the bottom of the hole.

Completion of this well opens an entirely new field for South Texas, identified as from the Pettus horizon in the Jackson series.

This well was not fully completed during the middle of the week, but was flowing by heads of 20 to 30 minutes, which were built up every one and one-half hour. The well was flowing through the tubing on a one-inch choke and the bottom of the tubing was 107 feet off bottom without a packer. The tubing was to be lowered to make the well flow more steadily. The oil is a paraffine base and has a specific gravity of 20.6 corrected. It is almost a solid lubricating oil of a very high quality.

Approximately 20,000 acres around the well are controlled by Jacob, Buzzini and Pickett, Inc., and Leonard Jacob Corporation.

Plans are now being made for the drilling of a number of tests on the block. The site for the next location, however, has not been announced.

The interesting feature of this discovery is that it is virtually surrounded by abandoned wells. During 1923, the Southern Natural Gas Company drilled three wells to the 750-foot sand in the near vicinity of this producer. A booster station was constructed on the property. The wells are said to have recovered around 2,000,000,000 cubic feet of gas. Other wells were drilled into the shallow horizon and abandoned, while others went fairly deep, finding showings in the 950-foot pay. The reason these wells were not completed undoubtedly can be accounted for by the fact that no adequate test tools were available at that time. The showings are not so promising when cored and completion of a well appears almost uncertain until it actually is flowing.

Recently the Jacob, Buzzini and Pickett organization made a location for Jacob 1 on the same block with the gassers. It was headed for the lower sands, but the show at 756 was so interesting that it was finished as a gasser. The new location was specially allowed 150 feet from the Jacob 1 due to the fact that it was to be deepened to a second horizon.

The second sand is apparently prolific from the oil standpoint, but not so from the gas. This makes it a most convenient operating arrangement. One gas well will provide the flowing facilities for several oil producers, greatly reducing the operating costs.

The Calliham field, referred to on page 34 of the April 11, 1932, issue of The Oil Weekly, is an evidence of the tremendous recovery of the shallow fields of this area in the Jackson formation.

United Completing Two Wells at Pettus

San Antonio, Texas.—United Production Corporation had one new producer practically finished up and a second in the process of completion at Pettus late in the week. Ray 41 in the George A. Kerr survey, 660 feet northwest of Ray 33 and 660 feet southwest of Ray 31, was swabbing with 600 feet of oil in the hole from 3943-53 feet. Ray 40, Thomas Hanson survey, 2990 feet southeast from the southwest corner of survey along southwest line, thence 2346 feet northeast at right angles, was drilling in after setting casing on top of a sand cored from 3943-46 feet.

The Texas Compauy resumed operations on the L. Gremmel Lease, John Pace survey, southwest Pettus extension. Gremmel 4, 450 feet southwest of Gremmel 3, set surface casing and resumed drilling, while location has been made for Gremmel 5, 400 feet north of Gremmel 1.

Henderson Coquat has set surface casing on Leroy Roberts 1, John Pace survey, in the extreme south end of the Cosden pool, a short distance north of the southwest exentension producing area. It may connect these two pools.

South Texas Field Developments

Completions

Company, Well and Location	Initial Production Bbls.	Depth
BEXAR COUNTY—		
Eckert & Sons, Sandemer 10, sur 58, Eckert pool, top sand 704 ft.....	7	720
CALDWELL COUNTY—		
Bob Rose, J. M. Pierce 1, Solomon Seal sur, 2 mi ne Luling, top chalk 2050 ft, hit crevice, flow 226 bbls first hour 5424		2114
DUVAL COUNTY—		
The Texas Co., Duval Ranch 1-A, Sec. 96, BS&F sur.	*	2100
GUADALUPE COUNTY—		
La Jita Corp., Sue Denman 2, Wm. Arrington sur, Camp area, Darst Creek, top Edwards lime 2479 ft..	600	2489
McMULLEN COUNTY—		
Jacob, Buzzini & Pickett, Inc., Jacob 2, W. H. Jacob sur No. 8, 5 mi n Calliham field, top sand series 948 ft	125	962
STARR COUNTY—		
H. H. Davis, Kelsey Bass 5, Sec. 6	12	468
WEBB COUNTY—		
O. W. Kills, Bruni (Ranchito) 5, Borrego grant	*	1872
WILLIAMSON COUNTY—		
McNeil et al, W. R. Lane 1, T. E. Shell sur	*	1700
ZAPATA COUNTY—		
Lobo Oil Co., G. T. Montemayor 3, Sec. 64, Blk. 7, Escobas field....	125	1438

Wildcat Drilling Report

(Wells shut down not included)

ATASCOSA COUNTY—American O&G Co., McConnell 2, blk 138, Baker sur, ru to deepen, td 1660 ft. Mid-States O&G Co., Tom 1, s part of county, lcn. Glen Mathis, Martin 2, Navarro sur, dr 2800 ft.

BASTROP COUNTY — I. L. Champion, Owens 1, Cosner sur, 3 mi ne Elgin, prep to spud in. Marts and Beavens, R. L. Carter 1, Geo. Glasscock sur, 3 mi e Elgin, dr around 1300 ft. Lonnie Evans and Dan Aulk, D. K. Orgain 1, Addison Litton league, 2 mi n Yost field, ru. Schimmel and Batts, Williams 3, James Stewart sur, Schimmel-Batts pool sp.

BEE COUNTY—Barnsdall Oil Co. & Henderson Coquat, L. Roberts 1, Jno. Pace sur, Pettus-Cosden, spud in and set surface cas. Gulf Coast Oil Co., Hicks & Hall 4, J. M. Uranga sur, blk 19, Normanna pool, coring below 3500 ft. Humble O&R Co., Laura Thompson 1, Garrett Roche sur, re-dr 5310 ft. Moody-Seagraves et al, B. Welder 1, H. Eyles sur, lcn. J. L. Mauldin et al, Kimball 1, Stephen Winchip sur, Grayburg area, lcn. Texas Gulf Prod. Co., Webb Hearn 1, 1500 ft n Wood 1, P. & T. Irrigation Co. sur, dr new water well. The Texas Co., L. Gremmel 4, Jno. Pace sur, sw Pettus, spud in and set surface cas; Gremmel 5, 400 ft n No. 1, lcn. United Prod. Co., George Ray 40, Thos. Hanson sur, Pettus, top sand 3943 ft, td 3946 ft, set cas, woc; George Ray 41, Geo. Kerr sur, top sand 3943 ft, td 3953 ft, swabbing, 600 ft oil in hole.

BEXAR COUNTY—Alamo Nat'l Gas Co. G. J. Gembler 4, A. Menchaca sur, Eckert pool, prep to spud; Coreth 1, Menchaca sur, Eckert pool, move on rig. Chiquita Oil Co., R. Pollock 3, J. W. Rialls sur, Cooksey area, dr 300 ft. Eckert and Son, Louis Brehm 1, Eckert pool, prep to re-dr 40 ft. L. W. Stieren 1, Annie Terrell 1, A. Steele sur, Cooksey area, dr 1250 ft.

BROOKS COUNTY—Ed East et al, Rudolpho Garza 1, Alta Meza area, dr below 200 ft. Allen and Morris, Holbein-Wormser 1, Palo Blanco de Maguellos Grant, Alta Mesa, lcn.

CALDWELL COUNTY—Bob Rose's G. C. Walker 1, S. Seal sur, 1 mi n Pierce well, dr 2330 ft in Buda lime. Empire O&G Co., Ursery 1, S. Seal sur, to make lcn. M. O. Rayor et al, Kreus, Samuel Shaupe sur, 6 mi nw Pierce well, ru. Geo. Sullivan (Shell) Plinsoll 1, M. W. Dennis sur, dk. C. J. Webster O&G Co., W. W. McCrory 1, John Neil sur, 7½ mi se Lockhart, top Edwards 2278 ft, 6⅝ inch cas set 2274 ft, total depth 2291 ft, prod. abt 60 bbls oil, 200 bbls sulphur water, plugging back to cut off water; McCrory 2, plane tabeling area, preparatory to making lcn.

DE WITT COUNTY—Pat Armstrong, E. T. Clark 1, Jose Santos sur, move on. J. F. Richardson, w Slick pool, making lcn.

DUVAL COUNTY—John F. Camp, Weil 1, sur 57, 1½ mi s Capps and Smith well, sand 2430-38 ft, dst failed, set cas. Capps and Smith, Duval Co. Ranch Lands 2, Sec. 576, 600 ft n No. 1, dr 200 ft. Cole Pet. Co., Benavides 75, blk 8, sur 9, Mariano Arispe Grant, Cole Bruni, dr 4510 ft. French Oil Corp., Lopez 1, sur 731, 2 mi sw Foster Rieter wells, spud in. James Hicks, W. R. Peters 1, sec 327, dr. F. P. Hynes, Fee 1, sec 196, blk 26, sd 1250 ft for water. Smith et al, Duval Co. Ranch 1, sec 574, lcn. J. S. Suttle, L. Bennett 1, sec 44, J. Poitevent sur, ½ mi e Seacord & Putnam well, sand 1603-05 ft, test 15 trebbles sw in 8 min., dr ahead. R. A. Thompson, A. Parr 1, A. Garcia sur, dr 4250 ft. Trinity Drillers, Inc., Hagist 1, sur 122, lcn.

GOLIAD COUNTY—Benedum & Trees and Plymouth Oil Co., Parks 2, se cor BS&F sur. No. 8, set 750 ft 15 inch cas, now dr 2925 ft. Humble O&R Co., M. Fromme 1, G. W. Kersey sur, 3 mi n Goliad, spud in. David E. Dunlap, A. T. Fromme 1, P. Dexter sur, dr 2575 ft. L. Neal et al, J. M. Pettus 1, Pedro Trevino sur, prep to re-dr 4565 ft. Slick-Seeligson, Allen 2, Obid Marshall sur, Slick pool, sand 4198-4213 ft, show 500 lbs. pressure, little oil in mud, 8 min on dst on 2¼ inch choke.

GUADALUPE COUNTY—J. W. Clark et al, Clay 1, Francisco Carvajal sur No. 47, lcn. Humble O&R Co., Sue E. Denman 5-C, Wm. Arrington sur, Darst Creek, spud in. La Jita Oil Corp., Sue E. Denman 2, Wm. Arrington sur, Darst Creek, top Edwards 2479 ft, set cas, dr in. Sal Mar Oil Corp., A. F. Pfullman 1, L. Ballinger sur, between Seguin and Darst Creek, prep to re-dr.

HIDALGO COUNTY—Dayle L. Smith Oil Co., Daskman 3, dr below 1500 ft.

JIM HOGG COUNTY—H. D. Conley, R. Holbein 1, Blk. 7, Sur 7, Holbein sub, Animas sur, dr 2430 ft. D. C. DeWitt, T. Gomez 1, Sec. 12, dr 1280 ft. E. Hough, N. Hinnant 1, Sec. 20, Fansler sur, blk 8, lcn. R. L. Huckett et al, F. C. Guerra 1, Sec. 86, blk 6, lcn.

C. J. Webster Oil & Gas Company's McCrory 1, Caldwell County wildcat, making head of oil and sulphur water. It is making about 60 barrels 36 gravity oil and 150 barrels of water, and is being plugged back to cut off the water.

JIM WELLS COUNTY — F. A. Lain, V. Porter 1, Tract 25, near Sandria, spud in and sd 500 ft. Mag. Pet. Co., Seeligson 1, Lot 5, Blk. 11, A. Ramirez sur, 15 mi s Ben Bolt, dr 5510 ft. S. J. Sloane, W. Wade 1, C. Blanca sur, blk 6, lcn.

KARNES COUNTY—Pickett et al, Meyers 1, 2 mi sw Runge, ru. C. F. Nichols, Newberry 1, sand 2995 ft, coring, show oil.

NUECES COUNTY—Gulf Coast Oil Co., Perkins and LaGasse 1, H. B. Shepherd sur, Saxet field, dr 4250 ft. James K. Kepley, C. D. Sevier 1, Por. 582-83-311, Saxet field, prep to re-dr, 429 ft. Rutherford Drlg. Co., J. Hunter 1, Saxet field, coring 2690 ft.

REFUGIO COUNTY—Humble O&R Co., M. V. O'Conner 1, J. Keating sur, dr 4167 ft; O'Conner 2, J. Keating sur, dr 3585 ft. Edwin M. Jones, Josephine Mitchell 1-B, Refugio Town lots, dr 8550 ft. Mid-States Oil & Gas Co., Dammann 1, (taken over from Bonnie Creek Oil Corp.), Blk. 16, Bonnie View Ranch, 8 mi s and e Refugio, sd 4675 ft. United Prod. Co., Fox 3, coring 6535 ft; Fox 4, dr 3250 ft; Fox 5, dr 3310 ft.

SAN PATRICIO COUNTY — Atlantic Oil Prod. Co., Welder 3, dr 5280 ft. John F. Camp & Stanolind O&G Co., N. R. Jackson 1, Sec. 50, G. H. Paul sur, 3 mi n Edroy, td 5225 ft, reaming 5180 ft.

STARR COUNTY—Allison & Roberts, Kelsey Bass 1, Sec. 6, to spud in. Brady Drlg. Co., City 1, Rio Grande City townsite, lcn. Coastal O&G Co., Kelsey Bass 1, blk 52, dr 400 ft. Kirk Cornell, Kelsey Bass 1, Sec. 8, move on. Day & Co., Kelsey Bass 1, sec 6, ru. John L. Dickens, Sec. 11, Por. 76, dr water well. Felders, Mitchell & Barnsley, Kelsey Bass 1, Sec. 7, rep machy, to re-dr, 286 ft. Hunter Eckles, Kelsey Bass 1, Sec. 8, dr 200 ft. F. S. Griffith, Kelsey Bass 1, Sec. 11, spud in. R. A. Hoffman, Goodrich 1, Blk. 6, Por. 81, lcn. O. W. Killam, Woods 1, Por. 81, near Rio Grande City, coring below 1400 ft. King Pin Oil Co., 1, share 22, Por. 80, prep to ru. Frank La Borde 1, Juan Marroguin 1, tract 21, Por. 75, dr 225 ft. Los Olmos O&G A. K. Bass 1, Sec. 11, lcn; Kelsey Bass 12, Sec. 6, dr 400 ft. Patton & Matlock, Kelsey Bass 1, Sec. 8, dr 100 ft. R. H. Pursley, Seabury 1, Blk. 41, prep to deepen 442 ft. San Marcos Dev. Co., 1, Por. 72, 1½ mi n Roma, lcn. Sinclair & Rutherford, Kelsey Bass 1, Sec. 6, prep to spud in; 1, Sec. 69, lcn. A. T. Ryalls Oil Co., M. E. Salinas 1, Por. 80, Share 38-C, prep to re-dr 1545 ft. J. A. Tarver, Kelsey Bass 4, Los Olmos, ru; Guerra 1, tract 17, Por. 79, prep to dr deeper 856 ft. A. F. Vannoy, Welsh 1, Pedernal Grant, blk 2, dr 780 ft.

VICTORIA COUNTY—Houston Oil Co., A. McFadden 1-A, IRR No. 20 sur, dr 2150 ft. T. B. Sick Estate, McFadden 2, J. Varin sur, dr 4097 ft, hard rock. The Texas Co., A. M. McFadden 4, trying to recover drill stem stuck 2840 ft. Victoria Oil Co., Keeran 1, dr 4405 ft.

WEBB COUNTY—Ross Amigos Oil Co., R. E. Garcia 1, Blk. 46, sur 592, ru. French Oil Corp., Benavides 7-A, sur 659, West Cole, spud in. Norden & Morris, Gates 1, Blk. 5, sur 19, dr 1655 ft. Mag. Pet. Co., S. Benavides 1, sec 660, ru. Phillip Rosenberg, Laruel 2, Blk. 8, Sur 271, ru.

WILLIAMSON COUNTY—H. A. McLean, R. C. Miller 1-A, Monlove & Robinson sur, dr 1000 ft. McNeil & Matthews, Bachmayer, 5 mi w and s Chapman field, dk. G. P. Peterman, K. Guentzel 1, H. Cook sur, dk; W. Galler 1, testing 1493 ft. G. L. Rowsey et al, Streit 1, J. West sur, ru.

ZAPATA COUNTY—Geo. Ball, Gutierrez 1, dr below 2100 ft. E. K. Bateman, M. Garza Estate 1, Blk. 41, ru. E. R. Black, M. Garza Estate 1, Blk. 11, spud in. J. M. Blair et al, Montemayor 1, blk 1, sur 63, dr 1390 ft, last report. O. W. Killam, Medina 6, sur 35, dr 400 ft. Joe Cullinan, Gutierrez 1, Charco de la India Grant, dr 200 ft. M. V. Lee, Trevino 1, sec 66, blk 7, dr 1400 ft. McGinley Corp., J. Bustamante 1, sec 35, dr 400 ft. Pet. Royalty Co., Pablo Trevino 1, Charco Redondo Grant, spud in. The Major Co., P. Benavides 1, Sec. 12, H&GM sur, test 1504 ft, last report, show sw and oil.

GULF COASTAL FIELDS

Raccoon Bend, Sugarland Given Maximum When Rest of Coast Fields Prorated to Average of April 2.

WM. V. GROSS, *Staff Representative, Houston, Texas*

Wildcat in Montgomery County in Limelight

Houston.—An interesting development is in prospect for the Beach area, Montgomery County, with the stage set for a show-down soon on possibilities for production in the old "Kelly-Baker" wildcat test, about six miles northwest of the Strake discovery well.

Following a shut-down of about two weeks, for clearing titles, the test was scheduled to resume Saturday, April 30, with only a small amount of additional drilling needed for attaining a depth approximating that of the Strake producer.

Spudded in as Kelly-Baker's H. Juerges 2 in February, 1930, the well has gone through various changes of ownership of operators and one of fee ownership, so that it is now Wilson Oil Company's George Lieberman 1. E. M. Wilson of Houston is head of that operating company. Location of the test is in the Denward James Survey, 2½ miles west of Conroe. Aside from the original and the present operators, the test has been under control of Wilhite and Hornbeck, Price and Wilhite, and Turner and Kelsey.

The latert operators abandoned the well early in August, 1931, stopping in sandy shale at 4898 feet. However, when the Beach area discovery well, Strake Oil Corporation's South Texas Development Company 1, came in December 13, 1931, as an oil and gas well after setting 67 feet of screen to total depth of 4991 feet, it was recognized that the "Kelly-Baker" test might possibly have stopped just short of the sand which proved productive in the Strake well.

Operations were consequently resumed recently, with Wilson Oil Company in charge, and some progress was made before the shut-down of two weeks ago. A drill stem test at the old depth of 4898 feet proved negative, as did one around 3550, where a showing of oil was reported before the abandonment of August, last year.

Following the recent drill stem tests three cores were taken, without any showings reported. Present depth is 4930 feet.

The Beach area is commanding further interest, also, by reason of the rapid progress which is being made on Strake Oil Corporation's South Texas Development Company 2, which will reveal something of the possibilities of the area lying south of the discovery well. Located 2200 feet south of the discovery well, the new test was reported late last week as nearing 4000 feet.

Erecting Storage for New Louisiana Field

Houston.—As Pure Oil Company proceeded April 29 with erection of an additional 1000-barrel steel storage tank, its Alliance Trust Company 2, recently completed discovery well of the Gueydan salt dome field, Vermilion Parish, Louisiana, continued showing favorably, flowing 200 barrels 27.5 corrected gravity oil daily through a 5/16-inch choke.

Pressure on the 2½-inch tubing meanwhile was 285 pounds, and on the casing 875 pounds. Temperature of the oil was around 88 degrees.

The new storage tank is being built to supplement the two 1000-barrel tanks, and the 500-barrel fuel tank which are already up. Decision has not been made by the affiliated pipe line company as to permanent arrangements for moving the crude oil from the field to the same interests, refinery at Smiths Bluff, Texas, near Beaumont, where it will be consumed.

This discovery well was completed late April 22, with 28 feet of screen set on bottom at 3552 feet.

Manvel Field Now Has Two Flowing Wells

Houston.—With two wells on production, the new Manvel field, Brazoria County, at present has production around 600 barrels daily.

Output was boosted during the past week when The Texas Company's Belcher 2 came in flowing 33 gravity oil after having been deepened from its original producing horizon at 5602 feet to a sand which it penetrated to 5685 feet. Late in the week it was flowing about 300 barrels net oil daily through a one half-inch choke, although the oil was accompanied by approximately the same volume of water and sediment.

Gulf Coast Allowable Fixed At Average of April 2

AUSTIN, TEXAS, APRIL 28.

ALLOWABLE production of fields in the Texas Gulf Coast was set at the average of the week ending April 2, 1932, which was approximately 107,000 barrels, in a formal order issued by the Texas Railroad Commission here Thursday. Exception was made in setting maximum allowances for Sugarland and Raccoon Bend. The order followed a hearing held at Houston on April 15.

Raccoon Bend was given an allowable of 6500 barrels, or 3500 barrels less than its previous maximum, and Sugarland is limited to 11,700 barrels maximum, 300 barrels below its previous figure.

Explaining that due to the fact that most of the Gulf Coast fields are of the piercement or non-piercement type of salt dome, and that there are often many producing horizons of different geological age which prevents these fields being handled as a single unit, the order has been designed by the commission to give special treatment to each field.

Refugio, Kleberg County, Bee County, Raccoon Bend and Sugarland will be exempt from the allowable set for the Gulf Coast generally, and special orders will be issued on these.

The commission points out that no observable waste is being committed in the Gulf Coast, according to the evidence adduced at the hearing, and also that operators in this area have experimented for many years to determine proper gas-oil ratios and other factors to be considered in properly operating their wells to obtain the maximum recovery with the minimum of physical waste.

Rules to Govern

To insure maintenance of this policy of prevention of waste, the commission

has issued the following field rules governing operations in this area.

Rule 1. All pumping wells shall be so produced so as to maintain the fluid level in each particular well to most efficiently produce the oil therefrom.

Rule 2. All flowing wells shall be produced on such size chokes and at such rate of flow as will accomplish the best gas-oil ratio for each individual well, taking into account the avoidance of premature appearance or increase of water indicated by rise in temperature and fluctuation in pressure, the premature cessation of flow of the well, the avoidance of the danger of sanding up, and the necessity of minimizing fluctuations in the rate of flow.

Rule 3. All flowing wells completed from and after the date of this order shall be completed in such manner and under such actual tests as may be necessary to arrive at the proper choke and other proper producing conditions under which such well will most efficiently flow so as to avoid waste due to improper gas-oil ratio, so as to avoid waste due to premature appearance or increase of water, so as to avoid waste due to premature cessation of flow of the well, so as to avoid waste due to danger of sanding up, and so as to avoid waste by minimizing unevenness of flow. The operator of such well shall prepare and preserve written record of the manner in which said well is completed and record of such test or tests with respect thereto as may be made in determining the size of choke, rate of flow, etc., as above outlined, by which he has determined the manner in which said well is produced.

Rule 4. All wells now completed and at this time producing in the salt dome fields shall be produced in accordance with Rule 1 and Rule 2 above, but in no event shall the average production of any such well exceed its average daily production for the week ending April 2, 1932, or in the case of any well shut down or having its average daily production reduced on account of mechanical difficulties, then the average daily production of such well shall not exceed its average daily production for the last preceding week, during which is was normally producing, provided if such restraint to average daily production would produce waste, then Rules 1 and 2 shall prevail.

Rule 5. All wells completed from and after the date hereof shall be completed and produced in accordance with Rules 1, 2 and 3.

Rule 6. On written complaint of the commission or any third party having an interest in adjacent producing property that any flowing well has been completed and is being produced in violation of Rule 3 so as to produce waste, the commission shall, without unreasonable delay, cause a hearing to be had thereupon, at which such hearing the operator shall produce the record required to be kept under Rule 3. Notice in writing of the time and place of such hearing shall be given to the operator of said well, or his or its representative in advance of the hearing. At such hearing the commission shall hear evidence and determine whether or not such well has been completed or is being produced in such manner as to create waste, and if so shall enter such orders as may be necessary to correct and avoid such waste.

The commission reserves the right to amend or change this order on the evidence adduced at the hearing on which this order is based. It is to continue indefinitely.

Texas Gulf Coast Field Operations

Completions

Company, Well and Location	Initial Production Bbls.	Depth
BURLESON COUNTY—		
Mid-South Oil Corp., Duckworth 1..	*	3070
GRIMES COUNTY—		
Camp & Stanolind O&G Co., Mary Sullivan 1, ne Plantersville, Asa Yeamans survey	*	4204
HIGH ISLAND—		
Yount-Lee Oi Co., Cade 26, N. Fitzsimmons survey	950	5330
HULL—		
Eclipse Oil Co., Barrow 1	250	4769
MANVEL—		
The Texas Co., Belcher 2, 1000 ft se No. 1	600	5685
MARKHAM—		
Claud B. Hamill, Tr., Northern Irrigation Co. 1, ne flank dome	*	3508
ORCHARD—		
Gulf, Moore 32, James Frazier sur.	1350	3929
PIERCE JUNCTION—		
Southern Pet. Corp., Barnes 1, wo..	*	4409

Wildcat Drilling Report

(Wells shut down not included)

AUSTIN COUNTY—Sloan & Gans' Nannie T. Jackson 1, San Felipe, dr 1040 ft shale and lime. Joe L. Mulvey's Schlechte 1, wo, near Kinney, dr 2300 ft, sand and shale.

BRAZORIA COUNTY — The Texas Co.'s Belcher 2, Manvel, completed, see above. Layne-Texas Co.'s Wisdom 9, Damon Mound, dr 3713 ft, hard lime. Quintette Oil Co.'s Leavitt 2, Jno. Peske sur, dr 1725 ft, sandy lime.

BURLESON COUNTY—Sansom O. & G. Co.'s Duckworty & Gilly 1, P. Singleton sur, set surface cas at 30 ft. J. E. Stubblefield's Mitchell 1, wo, near Lyons, will set casing at 600 ft. M. O. & T. Oil Co.'s Rogers 1, T. B. Reese sur, dr shale and lime at 2104 ft. E. M. Bracey et al's Bracey 1, J. Lastley sur, Somerville district, bldg dk.

CHAMBERS COUNTY — Pure Oil Co.'s Mayes 15, Lost Lake, spudded.

FORT BEND COUNTY—Jas. T. O'Hara's T. A. Brown 1, Pilant Lake, Barrett & Harris sur, dr 3620 ft, hard sandy shale. Humble & Gulf's Lockwood B-2, Rabb Ridge, dr 3889 ft, sandy shale; H. P. Lockwood 3, dr 4271 ft, sandy shale and lime; Booth 2, dr 4152 ft, shale. The Texas Co.'s Wolters 1, Rabb Ridge, n end field, dk. Gulf's Moore 32, Orchard, completed, see above.

GALVESTON COUNTY — Yount-Lee Oil Co.'s Cade 26, High Island, completed, see above; Cade 27, dr 5181 ft, hard sand and lime; Broussard & Orme 1, High Island, dr 5555 ft, water sand.

GRIMES COUNTY—Camp-Stanolind O. & G. Co.'s Mary Sullivan 1, abn, see above.

HARRIS COUNTY—W. R. Alexander et al's Herman Hale 1, R. A. Hanks sur, 9 mi ne Humble field, dr 4305 ft, shale. Framer O. & G. Corp.'s Minnetex 2, Mykawa, dr 100 ft, gbo.

JASPER COUNTY—Rio Neches Oil Co.'s Boykin 1-A, Rockland, will put on beam, showed oil 1261-1273 ft, set 6⅝-inch cas at 1254 ft, and 12 ft screen, but would not flow.

JEFFERSON COUNTY—Ft. Worth Dev. Co.'s O. M. Todd 1, Cheek prospect, 2 mi nw Humble's Nelson 1, being in Wm. Carr sur, 9 mi sw Spindletop, cored streaks of sand with slight oil shows around 4175 ft, will drill ahead.

LIBERTY COUNTY — Cranfill-Reynolds Co.'s Esperson 20, Esperson, dr 3982 ft shale. Devore Oil Co.'s W. T. Finley 1, 10 mi ne Liberty, Aug. B. Hardin sur, dr 3101 ft, hard sand. Bain et al's J. M. Neal 1, E. Tanner sur, ru.

MATAGORDA COUNTY—United North & South Dev. Co.'s Stoddard 1, Buckeye, J. C. Keller sur, trying to make dr stem test, oil show at 7793-7823 ft.

MONTGOMERY COUNTY — Heep Oil Corp.'s Mrs. M. E. Roberts 1, Conroe district, Wm. H. Harrison sur, installing boilers; Freeman 1, Beach, John Davis sur, spudded. Strake Oil Corp.'s South Texas Dev. Co. 2, 2200 ft s of discovery well, dr 3710 ft, sand. Pevehouse Oil Co.'s Sealey 1, 5 mi w Conroe, Peavyhouse sur, sd 3988 ft.

TRINITY COUNTY—Jno. Deering's Gibson 1, A. Donovan sur, dr 2226 ft, shale.

WALKER COUNTY—Geo. F. Kerr's Smither Bros. 1, dr 701 ft, shale.

WASHINGTON COUNTY—John Walker's H. Wendt 1, Clay Creek district, J. F. Perry sur, rig up.

Louisiana Gulf Coast Field Developments

Completions

Company, Well and Location	Initial Production Bbls.	Depth
JEFFERSON ISLAND—		
Jefferson Lake Oil Co., Lake Peigneur 30, completed as sulphur test	*	735
PORT BARRE—		
The Texas Co., Botney Bay Fee 11, 4-11s-3e, on ½-in choke	1185	3190
W. A. Aggers, S. D. Cochran 1, 21-6s-5e	*	3644

Wildcat Drilling Report

(Wells shut down not included)

ACADIA PARISH—Heywood & Heywood's Jennings Fee Simple 2, dr 1700 ft sticky shale.

ASCENSION PARISH—McElroy Oil Co.'s Lacy 2, 20-10s-4e, sw Sorrento dome, dr 4530 ft rock.

CALCASIEU PARISH—Shell Pet. Corp.'s F. Heyd 2, Iowa, 450 ft s of discovery well, set 7-inch cas at 6972 ft.

CAMERON PARISH—Brownie-Babbette Oil Co.'s R. A. Moore 1, flank test s of production at Black Bayou, dr 4511 ft shale and lime. Union Sulphur Co.'s Pure Oil Co. 1, nw flank of East Hackberry dome, dr 6330 ft rock.

IBERVILLE PARISH—Standard of La.'s Schwing-Wilbert 7, Bayou Blue, drld to 5383 ft, repairing boilers; Wilbert-Myrtle Grove 2, Bayou Choctaw, dr 3082 ft hard rock; Gay 2, Choctaw, dr 5780 ft gbo.

JEFFERSON DAVIS PARISH—Shell's O. A. Fontenot 1, Iowa, 450 ft e discovery well, dr 6315 ft shale.

TERREBONNE PARISH—The Texas Co.'s State Dog Lake 5, Dog Lake dome, dr 3234 ft hard lime rock; State Lake Barre 14, driving piling; LLE-Lake Barre 2, dr 3804 ft sandy shale. United Gas Pub. Serv. Corp.'s Minor Est. 2, Sec. 3-18s-16e, plugged back to 3882 ft from 6002 ft to test gas sand.

LA FOURCHE PARISH — States Prod. Co.'s W. H. Starck E, Chacahoula, ru. Pop Oil Co.'s Esponge & Vizier 1, Leesville, dr sandy shale with oil show around 3930 ft.

GULF COAST FIELDS OFFICIALLY NAMED

FINAL release was made late last week on names which have been officially adopted for salt domes, oil fields, and prospects along the Texas-Louisiana Gulf Coast.

Standardization of these names is the outgrowth of confusion in the past, when the same dome or field in some instances has been known by as many as three or four different names.

The accepted names as published herewith have been approved by the United States Geological Survey, the Houston Geological Society, the Texas Gulf Coast Oil Scouts' Association, and the Louisiana Gulf Coast Oil Scouts' Association, as well as the companies operating in the Gulf Coast.

The nomenclature committee representing the Houston Geological Society was composed of Henry Cortes, chairman, John C. Miller, L. P. Teas and Paul Weaver. The similiar committee for the Texas Gulf Coast Oil Scouts' Association included N. C. Ginther, chairman, G. C. Francisco, Jr., and George E. Robinson. The committee representing the Louisiana Gulf Coast Oil Scouts' Association was composed of Perry Padden, chairman, George A. Gammill and G. W. Holleyman.

The officially adopted names are herewith listed:

Proven Domes or Oil Fields

LOUISIANA

Standardized Name	Parish	Obsolete Name
Jennings	Acadia	Evangeline
Sorrento	Ascension	McElroy
Napoleonville	Assumption	
Edgerly	Calcasieu	
Iowa	Calcasieu—Jeff Davis	Bayou Arsene
Lockport	Calcasieu	
Starks	Calcasieu	
Sulphur	Calcasieu	
Vinton	Calcasieu	Ged
Black Bayou	Cameron	
Calcasieu Lake	Cameron	
Cameron Meadows	Cameron	
East Hackberry	Cameron	Kelso Bayou
Hackberry	Cameron	
Sweet Lake	Cameron	
Pine Prairie	Evangeline	
Avery Island	Iberia	Petit Anse—Marsh's Island
New Iberia	Iberia	Little Bayou
Jefferson Island	Iberia	Lake Peigneur
Fausse Pointe	Iberia	Loreauville—Eagle Point
Vermilion Bay	Iberia	
Weeks Island	Iberia	Grand Cote
Bayou Blue	Iberville	Bayou Bleu
Choctaw	Iberville	Grosse Tete—Plaquemine
Bayou Des Glaise	Iberville	Whiskey Bay
White Castle	Iberville	Square League
Welsh	Jeff Davis	
Chacahoula	La Fourche	Lutcher—Thibodaux
Leesville	La Fourche	Bayou La Fourche
Garden Island Bay	Plaquemines	
Lake Washington	Plaquemines	Grand Ecaille—Cockrell Bayou Long
Venice	Plaquemines	Rose—Spanish Pass—Tiger Pass
Port Barre	St. Landry	
Anse La Butte	St. Martin	
Bayou Bouillon	St. Martin	Bayou La Rompe
Section 28	St. Martin	Hager
Belle Isle	St. Mary	
Cote Blanche	St. Mary	
Bay St. Elaine	Terrebonne	Bay Coon Roads
Caillou Island	Terrebonne	Timbalier Bay
Dog Lake	Terrebonne	
East Bay Junop	Terrebonne	Bayou de Large—Taylor Bayou
Four Isle	Terrebonne	
Houma	Terrebonne	Montagut—Lirette
Lake Barre	Terrebonne	
Lake Pelto	Terrebonne	
Gueydan	Vermilion	

Prospects

LOUISIANA

Standardized Name	Parish	Obsolete Name
Bosco	Acadia	
Egan	Acadia	
Darrow	Ascension—Assumption	
Hayes	Calcasieu	
Johnson's Bayou	Cameron	
Spanish Lake	Iberia	
Happytown	Iberville	
Barataria	Jefferson	Lafitte
Roanoke	Jeff Davis	
Carencro	Lafayette	
Bay Marchand	La Fourche	Wisner Bay—Bay Champagne
Lake Hermitage	Plaquemines	Myrtle Grove
Potash	Plaquemines	Home Place
Gecho	St. Martin	
St. Martinsville	St. Martin	Cypress Island
Charenton	St. Martin	
Franklin	St. Mary	
Patterson	St. Mary	
Wax Lake	St. Mary	Bayou Sale
Pointe au Fer	Terrebonne	Four League Bay
Abbeville	Vermilion	
Mallard Bay	Vermilion	

Proven Domes or Oil Fields

TEXAS

Standardized Name	County	Obsolete Name
Raccoon Bend	Austin-Waller	Ives Creek
Allen	Brazoria	
Clemens	Brazoria	Hinkle's Ferry
Damon Mound	Brazoria	
Danbury	Brazoria	
Bryan Heights	Brazoria	Freeport
Hoskins Mound	Brazoria	
Manvel	Brazoria	
Stratton Ridge	Brazoria	
West Columbia	Brazoria	Kiser Hill
Barbers Hill	Chambers	Mont Belvieu
Lost Lake	Chambers	Cove
Big Creek	Fort Bend	
Blue Ridge	Fort Bend	
Sugarland	Fort Bend	De Walt-Cockburn
Rabb Ridge	Fort Bend	Clear Lake—Gubbels—Lockwood—Thompson
Long Point	Fort Bend	Pathfinder
Nash	Fort Bend	
Orchard	Fort Bend	Moore's Field
High Island	Galveston	
Batson	Hardin	
Saratoga	Hardin	
Sour Lake	Hardin	
Goose Creek	Harris	
Hockley	Harris	
Humble	Harris	
Mykawa	Harris	
Pierce Junction	Harris	
Big Hill—Jefferson	Jefferson	
Fannett	Jefferson	
Spindletop	Jefferson	
Davis Hill	Liberty	
Esperson	Liberty	Sheeks
Hankamer	Liberty—Chambers	
Hull	Liberty	
Moss Bluff	Liberty—Chambers	
North Dayton	Liberty	Dayton
South Liberty	Liberty	Liberty—South Dayton
Big Hill-Matagorda	Matagorda	Gulf
Hawkinsville	Matagorda	
Markham	Matagorda	Clemville
Orange	Orange	Cow Bayou—Terry
Port Neches	Orange	Mansfield Ferry—Bessie Heights
San Felipe	Waller—Austin	Brookshire—Sealy
Brenham	Washington—Austin	Mill Creek
Clay Creek	Washington	Gay Hill
Boling	Wharton—Fort Bend	Ferguson

Prospects (Condemned, Not-Condemned, Drilling, to Be Drilled, or Probably Never Will Be Drilled)

TEXAS

Standardized Name	County	Obsolete Name
Beasley	Fort Bend	
Clodine	Fort Bend	
Needville	Fort Bend	
Pilant Lake	Fort Bend	
Smith's Point	Chambers	
Jackson Ranch	Chambers	
Salt Cedars	Chambers	Oyster Bayou
Greens Lake	Galveston	Coon Ranch
Ferguson's Crossing	Grimes	Carlos
Carlos	Grimes	(2 separate areas)
Arriola	Hardin	
Cedar Bayou	Harris	Ulrich—Highland
Deer Park	Harris	Strang
Genoa	Harris	
Satsuma	Harris	
Cheek	Jefferson	Lovell's Lake
Devers	Liberty	
Citrus Grove	Matagorda	
Sheppard Mott	Matagorda	

has issued the following field rules governing operations in this area.

Rule 1. All pumping wells shall be so produced so as to maintain the fluid level in each particular well to most efficiently produce the oil therefrom.

Rule 2. All flowing wells shall be produced on such size chokes and at such rate of flow as will accomplish the best gas-oil ratio for each individual well, taking into account the avoidance of premature appearance or increase of water indicated by rise in temperature and fluctuation in pressure, the premature cessation of flow of the well, the avoidance of the danger of sanding up, and the necessity of minimizing fluctuations in the rate of flow.

Rule 3. All flowing wells completed from and after the date of this order shall be completed in such manner and under such actual tests as may be necessary to arrive at the proper choke and other proper producing conditions under which such well will most efficiently flow so as to avoid waste due to improper gas-oil ratio, so as to avoid waste due to premature appearance or increase of water, so as to avoid waste due to premature cessation of flow of the well, so as to avoid waste due to danger of sanding up, and so as to avoid waste by minimizing unevenness of flow. The operator of such well shall prepare and preserve written record of the manner in which said well is completed and record of such test or tests with respect thereto as may be made in determining the size of choke, rate of flow, etc., as above outlined, by which he has determined the manner in which said well is produced.

Rule 4. All wells now completed and at this time producing in the salt dome fields shall be produced in accordance with Rule 1 and Rule 2 above, but in no event shall the average production of any such well exceed its average daily production for the week ending April 2, 1932, or in the case of any well shut down or having its average daily production reduced on account of mechanical difficulties, then the average daily production of such well shall not exceed its average daily production for the last preceding week, during which is was normally producing, provided if such restraint to average daily production would produce waste, then Rules 1 and 2 shall prevail.

Rule 5. All wells completed from and after the date hereof shall be completed and produced in accordance with Rules 1, 2 and 3.

Rule 6. On written complaint of the commission or any third party having an interest in adjacent producing property that any flowing well has been completed and is being produced in violation of Rule 3 so as to produce waste, the commission shall, without unreasonable delay, cause a hearing to be had thereupon, at which such hearing the operator shall produce the record required to be kept under Rule 3. Notice in writing of the time and place of such hearing shall be given to the operator of said well, or his or its representative in advance of the hearing. At such hearing the commission shall hear evidence and determine whether or not such well has been completed or is being produced in such manner as to create waste, and if so shall enter such orders as may be necessary to correct and avoid such waste.

The commission reserves the right to amend or change this order on the evidence adduced at the hearing on which this order is based. It is to continue indefinitely.

Texas Gulf Coast Field Operations

Completions

Company, Well and Location	Initial Production Bbls.	Depth
BURLESON COUNTY—		
Mid-South Oil Corp., Duckworth 1..	*	3070
GRIMES COUNTY—		
Camp & Stanolind O&G Co., Mary Sullivan 1, ne Plantersville, Asa Yeamans survey	*	4204
HIGH ISLAND—		
Yount-Lee Oi Co., Cade 26, N. Fitzsimmons survey	950	5330
HULL—		
Eclipse Oil Co., Barrow 1.....	250	4769
MANVEL—		
The Texas Co., Belcher 2, 1000 ft se No. 1	600	5685
MARKHAM—		
Claud B. Hamill, Tr., Northern Irrigation Co. 1, ne flank dome	*	3508
ORCHARD—		
Gulf, Moore 32, James Frazier sur.	1350	3929
PIERCE JUNCTION—		
Southern Pet. Corp., Barnes 1, wo..	*	4409

Wildcat Drilling Report

(Wells shut down not included)

AUSTIN COUNTY—Sloan & Gans' Nannie T. Jackson 1, San Felipe, dr 1040 ft shale and lime. Joe L. Mulvey's Schlechte 1, wo, near Kinney, dr 2300 ft, sand and shale.

BRAZORIA COUNTY — The Texas Co.'s Belcher 2, Manvel, completed, see above. Layne-Texas Co.'s Wisdom 9, Damon Mound, dr 3713 ft, hard lime. Quintette Oil Co.'s Leavitt 2, Jno. Peske sur, dr 1725 ft, sandy lime.

BURLESON COUNTY—Sansom O. & G. Co.'s Duckworty & Gilly 1, P. Singleton sur, set surface cas at 30 ft. J. E. Stubblefield's Mitchell 1, wo, near Lyons, will set casing at 600 ft. M. O. & T. Oil Co.'s Rogers 1, T. B. Reese sur, dr shale and lime at 2104 ft. E. M. Bracey et al's Bracey 1, J. Lastley sur, Somerville district, bldg dk.

CHAMBERS COUNTY — Pure Oil Co.'s Mayes 15, Lost Lake, spudded.

FORT BEND COUNTY—Jas. T. O'Hara's T. A. Brown 1, Pilant Lake, Barrett & Harris sur, dr 3620 ft, hard sandy shale. Humble & Gulf's Lockwood B-2, Rabb Ridge, dr 3889 ft, sandy shale; H. P. Lockwood 3, dr 4271 ft, sandy shale and lime; Booth 2, dr 4152 ft, shale. The Texas Co.'s Wolters 1, Rabb Ridge, n end field, dk. Gulf's Moore 32, Orchard, completed, see above.

GALVESTON COUNTY — Yount-Lee Oil Co.'s Cade 26, High Island, completed, see above; Cade 27, dr 5181 ft, hard sand and lime; Broussard & Orme 1, High Island, dr 5555 ft, water sand.

GRIMES COUNTY—Camp-Stanolind O. & G. Co.'s Mary Sullivan 1, abn, see above.

HARRIS COUNTY—W. R. Alexander et al's Herman Hale 1, R. A. Hanks sur, 9 mi ne Humble field, dr 4305 ft, shale. Framer O. & G. Corp.'s Minnetex 2, Mykawa, dr 100 ft, gbo.

JASPER COUNTY—Rio Neches Oil Co.'s Boykin 1-A, Rockland, will put on beam, showed oil 1261-1273 ft, set 6⅝-inch cas at 1254 ft, and 12 ft screen, but would not flow.

JEFFERSON COUNTY—Ft. Worth Dev. Co.'s O. M. Todd 1, Cheek prospect, 2 mi nw Humble's Nelson 1, being in Wm. Carr sur, 9 mi sw Spindletop, cored streaks of sand with slight oil shows around 4175 ft, will drill ahead.

LIBERTY COUNTY — Cranfill - Reynolds Co.'s Esperson 20, Esperson, dr 3982 ft shale. Devore Oil Co.'s W. T. Finley 1, 10 mi ne Liberty, Aug. B. Hardin sur, dr 3101 ft, hard sand. Bain et al's J. M. Neal 1, E. Tanner sur, ru.

MATAGORDA COUNTY—United North & South Dev. Co.'s Stoddard 1, Buckeye, J. C. Keller sur, trying to make dr stem test, oil show at 7793-7823 ft.

MONTGOMERY COUNTY — Heep Oil Corp.'s Mrs. M. E. Roberts 1, Conroe district, Wm. H. Harrison sur, installing boilers; Freeman 1, Beach, John Davis sur, spudded. Strake Oil Corp.'s South Texas Dev. Co. 2, 2200 ft s of discovery well, dr 3710 ft, sand. Pevehouse Oil Co.'s Sealey 1, 5 mi w Conroe, Peavyhouse sur, sd 3988 ft.

TRINITY COUNTY—Jno. Deering's Gibson 1, A. Donovan sur, dr 2226 ft, shale.

WALKER COUNTY—Geo. F. Kerr's Smither Bros. 1, dr 701 ft, shale.

WASHINGTON COUNTY—John Walker's H. Wendt 1, Clay Creek district, J. F. Perry sur, rig up.

Louisiana Gulf Coast Field Developments

Completions

Company, Well and Location	Initial Production Bbls.	Depth
JEFFERSON ISLAND—		
Jefferson Lake Oil Co., Lake Peigneur 30, completed as sulphur test	*	735
PORT BARRE—		
The Texas Co., Botney Bay Fee 11, 4-11s-5e, on ½-in choke 1185		3190
W. A. Aggers, S. D. Cochran 1, 21-6s-5e	*	3644

Wildcat Drilling Report

(Wells shut down not included)

ACADIA PARISH—Heywood & Heywood's Jennings Fee Simple 2, dr 1700 ft sticky shale.

ASCENSION PARISH—McElroy Oil Co.'s Lacy 2, 20-10s-4e, sw Sorrento dome, dr 4530 ft rock.

CALCASIEU PARISH—Shell Pet. Corp.'s F. Heyd 2, Iowa, 450 ft s of discovery well, set 7-inch cas at 6972 ft.

CAMERON PARISH—Brownie-Babbette Oil Co.'s R. A. Moore 1, flank test s of production at Black Bayou, dr 4511 ft shale and lime. Union Sulphur Co.'s Pure Oil Co. 1, nw flank of East Hackberry dome, dr 6330 ft rock.

IBERVILLE PARISH—Standard of La.'s Schwing-Wilbert 7, Bayou Blue, drld to 5383 ft, repairing boilers; Wilbert-Myrtle Grove 2, Bayou Choctaw, dr 3082 ft hard rock; Gay 2, Choctaw, dr 5780 ft gbo.

JEFFERSON DAVIS PARISH—Shell's O. A. Fontenot 1, Iowa, 450 ft e discovery well, dr 6315 ft shale.

TERREBONNE PARISH—The Texas Co.'s State Dog Lake 5, Dog Lake dome, dr 3234 ft hard lime rock; State Lake Barre 14, driving piling; LLE-Lake Barre 2, dr 3804 ft sandy shale. United Gas Pub. Serv. Corp.'s Minor Est. 2, Sec. 3-18s-16e, plugged back to 3882 ft from 6002 ft to test gas sand.

LA FOURCHE PARISH — States Prod. Co.'s W. H. Starck E, Chacahoula, ru. Pop Oil Co.'s Esponge & Vizier 1, Leesville, dr sandy shale with oil show around 3930 ft.

GULF COAST FIELDS OFFICIALLY NAMED

FINAL release was made late last week on names which have been officially adopted for salt domes, oil fields, and prospects along the Texas-Louisiana Gulf Coast.

Standardization of these names is the outgrowth of confusion in the past, when the same dome or field in some instances has been known by as many as three or four different names.

The accepted names as published herewith have been approved by the United States Geological Survey, the Houston Geological Society, the Texas Gulf Coast Oil Scouts' Association, and the Louisiana Gulf Coast Oil Scouts' Association, as well as the companies operating in the Gulf Coast.

The nomenclature committee representing the Houston Geological Society was composed of Henry Cortes, chairman, John C. Miller, L. P. Teas and Paul Weaver. The similiar committee for the Texas Gulf Coast Oil Scouts' Association included N. C. Ginther, chairman, G. C. Francisco, Jr., and George E. Robinson. The committee representing the Louisiana Gulf Coast Oil Scouts' Association was composed of Perry Padden, chairman, George A. Gammill and G. W. Holleyman.

The officially adopted names are herewith listed:

Proven Domes or Oil Fields

LOUISIANA

Standardized Name	Parish	Obsolete Name
Jennings	Acadia	Evangeline
Sorrento	Ascension	McElroy
Napoleonville	Assumption	
Edgerly	Calcasieu	
Iowa	Calcasieu—Jeff Davis	Bayou Arsene
Lockport	Calcasieu	
Starks	Calcasieu	
Sulphur	Calcasieu	
Vinton	Calcasieu	Ged
Black Bayou	Cameron	
Calcasieu Lake	Cameron	
Cameron Meadows	Cameron	
East Hackberry	Cameron	Kelso Bayou
Hackberry	Cameron	
Sweet Lake	Cameron	
Pine Prairie	Evangeline	
Avery Island	Iberia	Petit Anse—Marsh's Island
New Iberia	Iberia	Little Bayou
Jefferson Island	Iberia	Lake Peigneur
Fausse Pointe	Iberia	Loreauville—Eagle Point
Vermilion Bay	Iberia	
Weeks Island	Iberia	Grand Cote
Bayou Blue	Iberville	Bayou Bleu
Choctaw	Iberville	Grosse Tete—Plaquemine
Bayou Des Glaise	Iberville	Whiskey Bay
White Castle	Iberville	Square League
Welsh	Jeff Davis	
Chacahoula	La Fourche	Lutcher—Thibodaux
Leesville	La Fourche	Bayou La Fourche
Garden Island Bay	Plaquemines	
Lake Washington	Plaquemines	Grand Ecaille—Cockrell Bayou Long
Venice	Plaquemines	Rose—Spanish Pass—Tiger Pass
Port Barre	St. Landry	
Anse La Butte	St. Martin	
Bayou Bouillon	St. Martin	Bayou La Rompe
Section 28	St. Martin	Hager
Belle Isle	St. Mary	
Cote Blanche	St. Mary	
Bay St. Elaine	Terrebonne	Bay Coon Roads
Caillou Island	Terrebonne	Timbalier Bay
Dog Lake	Terrebonne	
East Bay Junop	Terrebonne	Bayou de Large—Taylor Bayou
Four Isle	Terrebonne	
Houma	Terrebonne	Montagut—Lirette
Lake Barre	Terrebonne	
Lake Pelto	Terrebonne	
Gueydan	Vermilion	

Prospects

LOUISIANA

Standardized Name	Parish	Obsolete Name
Bosco	Acadia	
Egan	Acadia	
Darrow	Ascension—Assumption	
Hayes	Calcasieu	
Johnson's Bayou	Cameron	
Spanish Lake	Iberia	
Happytown	Iberville	
Barataria	Jefferson	Lafitte
Roanoke	Jeff Davis	
Carencro	Lafayette	
Bay Marchand	La Fourche	Wisner Bay—Bay Champagne
Lake Hermitage	Plaquemines	Myrtle Grove
Potash	Plaquemines	Home Place
Gecho	St. Martin	
St. Martinsville	St. Martin	Cypress Island
Charenton	St. Martin	
Franklin	St. Mary	
Patterson	St. Mary	
Wax Lake	St. Mary	Bayou Sale
Pointe au Fer	Terrebonne	Four League Bay
Abbeville	Vermilion	
Mallard Bay	Vermilion	

Proven Domes or Oil Fields

TEXAS

Standardized Name	County	Obsolete Name
Raccoon Bend	Austin-Waller	Ives Creek
Allen	Brazoria	
Clemens	Brazoria	Hinkle's Ferry
Damon Mound	Brazoria	
Danbury	Brazoria	
Bryan Heights	Brazoria	Freeport
Hoskins Mound	Brazoria	
Manvel	Brazoria	
Stratton Ridge	Brazoria	
West Columbia	Brazoria	Kiser Hill
Barbers Hill	Chambers	Mont Belvieu
Lost Lake	Chambers	Cove
Big Creek	Fort Bend	
Blue Ridge	Fort Bend	
Sugarland	Fort Bend	De Walt-Cockburn
Rabb Ridge	Fort Bend	Clear Lake—Gubbels—Lockwood—Thompson
Long Point	Fort Bend	Pathfinder
Nash	Fort Bend	
Orchard	Fort Bend	Moore's Field
High Island	Galveston	
Batson	Hardin	
Saratoga	Hardin	
Sour Lake	Hardin	
Goose Creek	Harris	
Hockley	Harris	
Humble	Harris	
Mykawa	Harris	
Pierce Junction	Harris	
Big Hill—Jefferson	Jefferson	
Fannett	Jefferson	
Spindletop	Jefferson	
Davis Hill	Liberty	
Esperson	Liberty	Sheeks
Hankamer	Liberty—Chambers	
Hull	Liberty	
Moss Bluff	Liberty—Chambers	
North Dayton	Liberty	Dayton
South Liberty	Liberty	Liberty—South Dayton
Big Hill-Matagorda	Matagorda	Gulf
Hawkinsville	Matagorda	
Markham	Matagorda	Clemville
Orange	Orange	Cow Bayou—Terry
Port Neches	Orange	Mansfield Ferry—Bessie Heights
San Felipe	Waller—Austin	Brookshire—Sealy
Brenham	Washington—Austin	Mill Creek
Clay Creek	Washington	Gay Hill
Boling	Wharton—Fort Bend	Ferguson

Prospects (Condemned, Not-Condemned, Drilling, to Be Drilled, or Probably Never Will Be Drilled)

TEXAS

Standardized Name	County	Obsolete Name
Beasley	Fort Bend	
Clodine	Fort Bend	
Needville	Fort Bend	
Pilant Lake	Fort Bend	
Smith's Point	Chambers	
Jackson Ranch	Chambers	
Salt Cedars	Chambers	Oyster Bayou
Greens Lake	Galveston	Coon Ranch
Ferguson's Crossing	Grimes	Carlos
Carlos	Grimes	(2 separate areas)
Arriola	Hardin	
Cedar Bayou	Harris	Ulrich—Highland
Deer Park	Harris	Strang
Genoa	Harris	
Satsuma	Harris	
Cheek	Jefferson	Lovell's Lake
Devers	Liberty	
Citrus Grove	Matagorda	
Sheppard Mott	Matagorda	

NEW MEXICO . . . ROCKY MOUNTAIN

Hobbs Extension Test Finds Favorable Marker
Western Wyoming Activity Increasing; Line Enlarged

Staff Correspondent, Casper, Wyoming

Milk River Wildcat Test Resuming With Rotary

Browning, Mont.—The wildcat well on the Milk River structure, in Glacier County, northwestern Montana, is now being changed over from cable tools to rotary rig, and should be drilling again around the first of May. The operation has been taken over by Milk River Petroleum Company, as successor to the Fulton Blackfeet Oil Company, and the well drilled to 2965 feet by cable tools.

This well gave very favorable indications in the upper sands, having had a considerable showing of natural gas in one horizon.

West Mule Creek Drilling To Be Increased

Lusk, Wyo.—Interstate Oil & Refining Company will double the capacity of its refinery in the West Mule Creek field, Niobrara County, eastern Wyoming. The company has a drilling campaign for several wells in the field, in the shallow zone, to be drilled this summer, and in addition will continue work on its deep test which has been standing bottomed around 700 feet during the winter.

The company has planned to enlarge its pipe line capacity and storage facilities, also, it is stated. Among other things, a new power plant will be built and a Diesel engine installed.

Craig, Colo.—Actual construction of the Ohio Oil Company's three-mile gas pipe line from the new Craig structure to the town is now under way. Line will be of three-inch and four-inch pipe and trenching is being done for it by hand.

First Test Announced For Colorado Spring Campaign

Greeley, Colo.—It is expected that Tulsa-Fort Morgan Oil Company will spud a cable tool test in the new Raymer district, about five miles northwest of the town of that name, by May 1. This will probably be the first activity in the spring for the northeastern Colorado area which was the scene of so much development last year. It is reported, also, that a test is to be drilled on the Niles acreage in the Greasewood field east of the three producing wells.

The Briggs well in the Greasewood field has produced more than 65,000 barrels of oil since last September and is still good for about 225 barrels per day.

Work to Start Soon on Utah-New Mexico Line

Farmington, N. M.—The pipe line announced last week at Los Angeles to be laid from some 20 shallow producers in the southeastern corner of San Juan County, Utah, to the Continental Oil Company refinery at Farmington as soon as weather conditions will permit. The work is to be done by the San Juan Pipe Line Company, a new concern backed by Los Angeles and Boston capital. The wells in the group produce high grade crude from a shallow sand. They have been shut in for several years, awaiting a market.

Important Hobbs Extension Southeast Seems Pending

Hobbs, New Mexico.—Important extensions for the Hobbs field in a northwest direction remain possible as result of Amerada Petroleum Corporation's Boon Hardin 1, SWc 18-18s-38e, an outpost location, having logged the top of the brown lime horizon, an unfailing marker, at 2825 feet, or 846 feet above sea level. Hardin 1 is located about one-half mile northwest of nearest production, and proves the theory that the production trend to the northwest is wide open for safe development. Collapse of a string of 10¾-inch pipe set at 2781 feet in this outpost retarded progress temporarily late last week.

Farmington, New Mexico.—Continental Oil Company and Santa Fe Corporation's Munoz Permit 24, located on Rattlesnake Dome, San Juan County, was coring in lime and green shale late last week at 7303 feet. Munoz 17, a workover deep test on the dome, was swabbing an average of 15 barrels of oil and like amount of water at total depth of 6985 feet, and will be placed on pump. Munoz 28 has been completed in the regular shallow sand horizon making 10 barrels high gravity oil daily after plugging back from 958 to 764½ feet.

Holders of Deeds Sue for Osage Nation Mineral Rights

Washington, D. C.—Important suits involving title to all the oil and gas underlying the Osage lands have been filed in Oklahoma by Henry R. Adams et al, E. C. Mullendore et al, and Charles F. Yarborough against the Government to restrain the defendants from setting up or making any claim to the oil, gas or other minerals heretofore extracted or mined or that may be extracted from these lands, according to a report to the Department of Justice this week.

The persons claiming adversely to the tribe in these suits, it was explained by the department, base their claim upon deeds received from Osage allottees, contending that the title to the minerals passed from the tribe to the allottees and vested on April 8, 1931, under the allotment act of June 28, 1906, and that the act of March 3, 1921, amendment the allotment act so as to extend the period restricting the minerals for an additional 27 years, is invalid for the reason that under the allotment act the allottee took a fee simple title by his deed from the tribe to the allotted lands. The Government, on behalf of the tribe, meets this with the contention that the tribal title to the minerals never passed under the allotment act or the allotment deeds, but that Congress reserved full right to extend the period of restrictions and otherwise deal with the minerals.

"The importance of this matter," it was stated by department officials, "is disclosed by the fact that the questions involved in the suits affect the title to all the oil, gas and minerals underlying lands of the Osage Nation, and the question before the court is whether the tribe is entitled to the royalties arising from the minerals, or whether the allottees and their grantees are entitled to the same. These questions have been decided favorably to the Government and the Indian tribes by the District Court, but the cases have been appealed and a brief of the appellants was served on the Government during the past week."

NEW MEXICO

Company, Well and Location	Initial Production Bbls.	Depth
LEA COUNTY (Hobbs Field)—		
Continental Oil Co.'s State 6-A-33, 33-18-38	no test	4155
Midwest Refining Co.'s Turner 8, nw sw 34-18-38	potential 19,400	4170

BERNALILLO COUNTY—Norrins Realty, Pajarito Grant 1, 22-9n-1e, fsh casing 1295 ft.

CHAVES COUNTY — Warman Oil Trust, Evans 1, 15-14s-25e, sd for orders 1203 ft.

CURRY COUNTY—G. L. Tour, 24-2n-31, ur 6⅝ inch, td 759 ft.

DeBACA COUNTY — Montgomery et al, Wood 1, ne 6-4n-20e, dr 4137 ft. Landowners Oil Co., State 1, ne 16-1s-27e, sd for cem to set, td 4705 ft.

DONA ANA COUNTY—Middle States O&G Co., Boretzi 1, 14-26-5e, rigged.

GUADALUPE COUNTY—N. M. Prod. & Ref. Co., McMillan 1, 24-5n-16e, dr 4335 ft.

LEA COUNTY—Baker Oil Co., Inc., sw nw 15-13s-33e, mvg in.

LUNA COUNTY—Angelus O&M Co., State 3, se 30-21-10, try to reset cas 6171 ft.

RIO ARRIBA COUNTY—Berrenger et al's Hartman 1, 8-29n-7w, sd 825 ft. Governador Oil Co.'s 1, 15-29n-7w, working with pipe, td 2070 ft.

ROOSEVELT COUNTY — Peterson et al, Good 1, 32-5s-30e, rig up.

SAN JUAN COUNTY—Continental Oil Co.-Santa Fe Corp., Munoz-Rattlesnake 17, ne 2-29n-19w, swab oil and water, td 6985 ft; Munoz-Rattlesnake 24, sw 1-29n-19w, cored lime and green shale 7288-7303 ft; Munoz-Rattlesnake 28, pumping 10 bbls oil daily after pb from 958 to 764½ ft.

WYOMING

CARBON COUNTY—Prairie O&G Co.'s 1, 29-27-89, resum 6147 ft. Midwest Refining Co.'s 27 U. P., 27-11-81, prep to res.

CONVERSE COUNTY—John Ackard, se 24-33-72, dr 2000 ft.

FREMONT COUNTY—Wiebolt et al, 35-33-99, new location, skid rig. Ward O&G Co., 28-34-90, rigging to spud rotary test. Yellowstone Oil Co., Gabus 1, sw 14-38n-94w, resuming 918 ft.

NATRONA COUNTY — Mutual Oil Synd., Midway 2, sw se 14-36-79, dr 3700 ft.

SHERIDAN COUNTY—R. & D. Oil Co., nw se 21-57-87w, dr 1400 ft.

WASHAKIE COUNTY—Bales Oil Trust, Brome 1, ne nw 31-48n-90w, run 8¼-inch to bottom at 1105 ft.

WESTON COUNTY — Julius Peters et al, Weitzell 1, se nw 30-46-64, dr 3400 ft. Martens & Paulson, sw se 31-47n-63w, location. Gose Oil Synd., ne 28-47n-63w, ur to lower 6¼-in., td 5050 ft.

MONTANA

BROADWATER COUNTY — Capitol O&G Co., nw 7-8n-1e, dr below 2000 ft.

CARBON COUNTY—Corbett Roy. Co., sw se 1-16s-23e, resetting 8¼-inch, td 1120 ft. Jack Creek O&G Co., se 15-7s-23e, skd rig. Midland Oil Co., nw 24-6s-23e, new contract let to complete, td 150 ft. Ohio Oil Co., Kutchinski 1, 15-7s-21e, cem on top Dakota 5928 ft.

CARTER COUNTY—E. T. Moorehead, sw 36-4s-57w, wait for 12½-inch at 350 ft.

CASCADE COUNTY—Buscher & Cassady, Johnson 1, se 19-22-3e, wait for Merz test, td 1387 ft. Charles Merz et al's Sheffels 1, nw 4-21-4e, dr bel 1050 ft.

FALLON COUNTY—H. W. Mac Donald's 1, sw 28-8n-60e, 8¼-in cem, co 1682 ft.

FERGUS COUNTY—Melton Corporation's 1, sw 24-21n-17e, dr and carry 8¼-in casing 3120 ft. Landheim-Romunstad 2, ne 3-17n-20e, set 6⅝ inch at 2116 ft, td 2600 ft.

GALLATIN COUNTY — Montana Gas & Pete Corp., Adams 1, 35-1n-2e, dr 1650 ft. Gallatin Valley Oil Co., Haglund 1, sw 13-34-6w, to res 2539 ft.

GLACIER COUNTY—Finn et al, McLellan 1, nw se 12-34-6w, rig up, wait for dr pipe. Fulton Blackfeet Oil Co., ne 28-36-12w, replacing standard with rotary rig, td 2947 ft. Jefferies et al, se ne 17-31-12w, prep to dd from 2980 ft. Tarrant et al's Haglund 1, nw sw 13-34-6w, dr 2700 ft. Browning Dev. Co., Reickoff 1, ne 3-34-6w, rigged to resume.

GOLDEN VALLEY COUNTY—Golden Valley Oil Co., 2-6n-22, dr bel 3035 ft.

LIBERTY COUNTY — Northland O&G Corp., Yurman 1, sw 32-33-5e, bail water, td 3815 ft. California Co., Ross 1, ne 3-33-6e, abandoning 3337 ft. Peoples O&G Co., nw 17-36-6e, try to sidetrack lost 700 ft of 8-in, td 2000 ft

MUSSELSHELL COUNTY — Minnesota-Flatwillow Pete Co.'s 1, sw 7-11-31e, prep to resume 2565 ft.

PONDERA COUNTY—Bell-Adams' 1, ne 31-27-4w, rigging up.

TETON COUNTY—California Co.'s Sullivan 1, nw 34-28-7s, co to cement, td 2810 ft.

TOOLE COUNTY—Oregon Syndicate, se 20-36-2e, ur 5 3/16-inch to 2550 ft.

VALLEY COUNTY—Opheim O&G Co., ne 28-37n-38e, mvg in.

YELLOWSTONE COUNTY—Spokane-Laurel Oil Co., sw se 30-2s-24e, spudding. Peter Antonioli, ne ne 2-2n-25e, prep to run 5 3/16-in. td 2470 ft.

COLORADO

ADAMS COUNTY—Hills Dome Lease Dev. Co., se 27-3s-54w, run 6⅝ inch to carry, td 4050 ft.

ARAPAHOE COUNTY—McDeb Drlg. Co., Fitzsimons 1, ne 7-4s-66w, dr 5980 ft.

ARCHULETA COUNTY — Oil City Pete Co., Fitzhugh 1, sw 34-33n-1e, sd for fuel, much gas 717 ft.

EL PASO COUNTY—Gulf States Oil Corp., Carson 2, ne 10-16e-66, dr 1650 ft.

JEFFERSON COUNTY—Ruby Hill O&G Co., Braden 1, se 24-4s-69w, wait 4¾ in, 4280 ft.

LA PLATA COUNTY—McGarr Pete Co.'s Pinon Mesa 1, ne 34-33n-12, rig up. J. W. Irwin & Co.'s Doescher 1, nw 29-33-13w, install rotary, td 3175 ft. Phipps et al, sw 9-33-13, td 520 ft.

LARIMER COUNTY—Mayer et al, Reed 1, nw 28-4n-60, dr and carry 6⅝ inch 3700 ft.

PARK COUNTY — South Park O&G Co., Milligan 1, se 13-8s-76w, sd 2710 ft.

RIO BLANCO COUNTY—California Co.'s Raven 1, se 20-2n-102, dr in red beds 4895 ft.

WELD COUNTY—Reiter-Foster Oil Corp.'s Johnson-Juhl 1, se se 14-6n-61, standing for orders 6270 ft. Tulsa-Ft. Morgan Oil Co.'s Arthis 1, ne ne 24-8n-59w, bldg rig. Weld Royalties Co., se 29-9n-61, location.

LOUISIANA FIELDS

Ten New Starts Announced for Zwolle Area.

Sabine Parish Wildcat Has Good Oil Showing.

Staff Correspondent, Shreveport, La.

Rush of New Work Follows West Extension at Zwolle

Shreveport.—Ten new locations were made in the Zwolle field of Sabine Parish during the last week four being in the southwest extension of the Zwolle townsite pool, which the week before was extended a half mile farther west by a 2500-barrel flowing well, Coats Petroleum Company's S. S. Martinez B-1, SE NE Section 3-7-13.

One mile east and 600 feet north of this test on Saturday, April 24, Beene and associates' Ezernack 1, SE NE NE Section 2-7-13, blew in at 2400 feet in Zwolle chalk, and flowed for six hours at an estimated rate of 2500 barrels of oil daily and then bridged. The production was coming from a break in the chalk at 2393-95 feet. Six thribbles of drill stem was dropped in the hole after the well blew in. Six-inch casing had been cemented at top of the Zwolle marl at 2057 feet.

The following are the locations made last week for that part of the field as a result of these two wells: Dengail Oil Company, Nulton E-1, NW NW Section 1-7-13, rigging up Nulton F-1, SW NW Section 2-7-13, location; Nulton G-1, NE NE Section 3-7-13, rigging up; and Pelican Natural Gas Company, Sabine Lumber Company 8, NE SW Section 3-7-13, materials.

Five new locations were made in the southeast part of the Zwolle field: Depression Oil Company, Peters 1, SW SW Section 11-7-11; D. Holcomb, Petty 1, SW SW Section 12-7-11; A. D. King, Trustee, T. L. Andries 1, SE SE Section 15-7-11; J. J. Andries 1, SE SW Section 15-7-11; and M. J. Kissick, Buvens 1, NE NE Section 20-7-11.

In the original West Zwolle (Blue Lake) area, R. L. Gay, Trustee, made location for Bowman-Hicks 11, NE NE Section 14-7-14.

One small producer was completed in Zwolle during the last week: E. F. Neely's Clanan 2, Section 14-7-11, which is flowing 30 barrels of oil daily by heads at 2513 feet.

Casing Trouble Delays Sabine Parish Completion

Shreveport.—After considerable live oil had been bailed from the hole, casing trouble developed Monday, April 25, in J. J. Kean's Belton 1, NW SE NE Section 31-9-13, Sabine Parish, five miles northwest of Zwolle production and 12 miles west of the Spring Ridge field; total depth is 3128 feet, three feet in the lower Cretaceous. While no analysis was made of the oil, it is said to have looked very much like Bull Bayou, Louisiana, oil, which comes from the contact of the upper and lower Cretaceous. Elevation of Belton 1 is 232.6 feet.

On Wednesday, April 27, operators were preparing to go into the hole with a view to milling out of the casing, although some indications were that it had

collapsed. Some salt water appeared after the casing trouble developed.

R. L. Gay, Trustee's Long-Bell A-1, NW NW Section 10-8-13, five miles north of Zwolle, which showed oil in the Glen Rose oolitic lime at 4772 feet, on Wednesday, April 27, was drilling hard lime at 4962 feet.

Eight miles southeast of this test, Loring Oil Company sidetracked at 4480 feet, in Bowman-Hicks 18, Section 15-7-12, whose old depth is 4850 feet, and later was drilling in new hole at 4542 feet.

North Louisiana Field Developments

Completions

Company, Well and Location	Initial Production Bbls.	Depth
SABINE PARISH (Zwolle)—		
E. F. Neely, Clanan 2, 14-7-11....	30	2513

LOUISIANA

New Operations

ASCENSION PARISH, (Drill)—Rio Bravo Oil Co., Houston, Mrs. W. J. O'Neal 1, 1500 ft se and 30 ft at rt angle from most westerly nw cor of sec. 31-10s-3.

CALCASIEU PARISH—Union Sulphur Co., Sulphur, J. H. Moss 2, 300 ft w and 150 ft s of ne cor of nw¼ of se¼ of sec. 8-10s-9w.

CAMERON PARISH — Sul-Tex. Oil Co., Lake Charles, Doiron 1, 181 ft w and 12 ft n of nw cor of sec. 46-12s-9w, in lot 3 of Doiron sub. in sec. 36-12s-10w. Calcasieu Oil Co., Sulphur, Unsurveyed Island 2, 3925 ft n and 1138 ft e of sw cor of sec. 39 in sec. 24-12s-10w. The Texas Company, Shreveport, State-East Hackberry 9, 2500 ft n and 70 ft e of se cor of sec. 13-12s-10w, well being in twp. 12s-10w.

GRANT PARISH—O. B. Robichaux, Urania, T. M. Bradford 1, 1870 ft e and 314 ft s of nw cor of sec. 16-9n-1e.

IBERIA PARISH—Jefferson Lake Oil Co., New Orleans, Lake Peigneur 32, 250 ft n and 67° 35 minutes w of well No. 30 in Lake Peigneur.

NATCHITOCHES PARISH—W. D. Perritt et al, Shreveport, C. J. Cook 1, 330 ft n and 50 ft e of sw cor of ne¼ of sw¼ of sec. 3-8n-9w.

SABINE PARISH — Depression Oil Co., Shreveport, Peterson 1, 355 ft n and 340 ft w of se cor of sw¼ of sw¼ of sec. 11-7n-11w. Crescent Drilling Co., Monroe, Byrd 3, 330 ft n and 150 ft w of se cor of nw¼ of ne¼ of sec. 12-7n-11w. R. V. Neff, Shreveport, Snell 1, 300 ft n and 300 ft w of se cor of sec. 9-7n-11w. States Prod. Co., Shreveport, Ola B. Davis B-1, 200 ft n and 200 ft e of sw cor of sec. 17-7n-10w. Pelican Nat'l Gas Co., Shreveport, 4-L Lbr. Co. 13, 330 ft n and 330 ft w of se cor of ne¼ of se¼ of sec. 9-7n-11w. Service Drilling Co., Shreveport, L.L.L. Lbr. Co. 1, 300 ft s and 218 ft w of center of sec. 12-7n-11w. A. D. King, Tr., Shreveport, Pasture 1, 140 ft s and 240 ft w of ne cor of se¼ of sw¼ of sec. 15-7n-11w. A. D. King, Tr., Shreveport, Andries, T. L. 1, 200 ft s and 300 ft e of nw cor of sw¼ of sec. 15-7n-11w. Ben Merritt, Monroe, C. B. Byrd 1, 660 ft s 50 ft e nw cor nw¼ sw¼ of sec. 1-7n-11w.

TERREBONNE PARISH—The Texas Co., Shreveport, State-Lake Pelto 7, 2216 ft n and 104 ft w of se cor of sec. 8-23s-18e.

UNION PARISH—Interstate Nat'l Gas Co., Monroe, W. C. Steele 3, Interstate 29, 660 ft e and 660 ft s of n¼ cor of sec. 26-20n-3e. Interstate Nat'l Gas Co., Monroe, W. C. Steele 2, Interstate 28, 1980 ft w and 660 ft n of se cor of sec. 26-20n-3e.

Wildcat Drilling Report

(Wells shut down not included)

BOSSIER PARISH — Dr. Hankins et al, Newell 1, 12-19-11, sr td 1890 ft.

CALDWELL PARISH—Carter Bell et al, A. R. Taylor 1, 17-14-4e, tested sw show gas at 2488 ft, core shale 2495 ft.

DE SOTO PARISH—E. T. Oakes, Johnson 1, 30-13-15, dr hd shale and lime 3467 ft. De Soto Dev. Co.'s Nickie 1, 7-13-12, dk. Walters & Nicholson, Jim Guy 1, 8-inch 1582 ft, blg to test, td in chalk 1675 ft. Warren & Craig, C. Phillips 1, 33-13-14, sd repr rig 2400 ft. Donly Bros. (formerly carried Connelly Bros.), H. Smith 1, 31-14-15, co 2295 ft.

GRANT PARISH — Security Pet. Corp., Swope 1, 16-8-1e, dr sandy shale 1229 ft.

NATCHITOCHES PARISH — Southland Drilling Co., Rose Olive 1, 10-9-10, rig. Dr. H. S. Gerson et al, Smith 1, 11-10-8w, hole cleaned, sd 1000 ft. Dr. H. S. Gerson et al, Smith 3, 6-10-8w, lcn. H. W. Perritt, Brown Lbr. Co. 2, 30-7-9, lcn. H. W. Perritt Cook 1, 3-8-9, rig. Rains et al, Beard 1, 8-8-10, lcn. R. A. Keator, Stephens 1, 25-10-6w, sd 1500 ft.

OUACHITA PARISH—Wilson & Mitchell, W. L. Williams 1, 5-16-1e, core shale and chalk 2930 ft.

RED RIVER PARISH—C. F. Davis, Peterson 1, sw nw 12-14-11, lcn.

SABINE PARISH—J. J. Kean, Belton 1, 31-9-13, elev 232.7 ft, 6-inch cas set at 3104 ft, collapsed while bailing, sd wo 3128 ft. R. L. Gay, Tr., Long-Bell A-1, nw nw 10-8-13, core hd lime 4962 ft. Texas Co., Giaque B-1, 10-7-13, sp 10-inch 65 ft, dr 900 ft. Geo. LeGrand, McGough 1, 2-8-10, rig. Loring Oil Co., Bowman-Hicks 18, 15-7-12, sdtr at 4480 ft, dr 4542 ft. R. W. Boulding, Williams 1, 17-7-10, rig. Mays & Mead, DeLong 1, 5-7-10, dk. J. F. Palmer, Davis 1, 17-7-10, dk. Williams & Spiers, Williams 1, 31-8-10, dk. State Prod. Co., Davis 1, 17-7-10, rig. King, Tr., Germain 1, 7-7-10, sd for water, 1170 ft. J. I. Hall, Williams 1, 3-7-10, dr shale 2410 ft. J. M. Bridges, Armstrong 1, 28-10-11, 10-inch 110 ft, dr 500 ft. Southland Drilling Co., Frost Lbr. Co. 1, ne ne 13-9-11, dk pat.

WEBSTER PARISH—J. K. Wadley et al, Matthews 1, 11-23-9, coring 2749 ft.

ARKANSAS FIELDS

Abandonment of Five Tests Reduces Arkansas Activity to Small Proportions.

Five Arkansas Wildcat Operations Are Abandoned

El Dorado, Ark.—Five wildcat tests, two in Pike County, and three in Union County, were abandoned in Arkansas, during the week ending April 27. Kentucky-Arkansas Oil & Gas Company abandoned Tilyou 1, Section 26-8s-24w, Pike County, as a dry hole at 2920 feet in lime rock; the well had been inactive several months. The same company decided not to skid over for another hole in W. B. East 1, Section 13-9s-23w, in the same county, and abandoned the first hole at 1812 feet in rock.

Between the Champagnolle (Rainbow City) and El Dorado East fields, in Union County, Sunby and associates junked and abandoned Perdue 2, Section 33-16-14, at 2460 feet in a hard formation, after twisting off drill stem. Drillers Oil & Development Company abandoned Pickering 1, Section 1-17-16, Union County, as a salt water hole, at 2166 feet, and also J. A. Heney 1, in the same section, at 2280 feet in white salt water sand. Hill and associates have abandoned location for Barnes 1, NE NE Section 21-19-15, Union County, where derrick had been up for several months.

W. H. Copenhaver and associates last week cemented six-inch casing at 2141 feet, with total depth of 2188 feet, in Berg 1, Section 13-15-17, Ouachita County, two miles northeast of the Mount Holly field, a small producing field uncovered in 1929.

Plan Test of Tokio Sand On DeSoto Parish Block

Shreveport. — Interstate Natural Gas Company made locations during the last week for two tests in the Union Parish part of the Monroe gas field. These tests will be W. C. Steele 2 and 3, both in Section 26-20-3e.

Standard Oil Company of Louisiana which has a block of 4000 acres eight miles southwest of the Holly field of DeSoto Parish, where it owns all of the 350 barrels daily production, is planning to make location by May 1, on the wildcat block. It will probably go to the Tokio which produces in Holly at the 2900-foot level, but is extremely lenticular.

Arkansas Field Developments

Completions

Company, Well and Location		Initial Production Bbls.	Depth
PIKE COUNTY—			
Kentucky-Ark. O&G Co., Inc. W. B. East 1, 13-9s-23w	*		1812
Kentucky-Ark. O&G Co., Inc., Tilyou 1, 26-8s-24w	*		2920
UNION COUNTY—			
Sunby et al, Perdue 2, 33-16-14....	†		2460
Drillers O&D Co., J. A. Haney 1, 1-17-16	*		2280
Pickering 1, 1-17-16	*		2166

Wildcat Drilling Report

(Wells shut down not included)

ASHLEY COUNTY—D. S. Brooks et al, Crossett Lbr. Co. 1, sw se 31-15-6, dr shale 2195 ft.

CRAWFORD COUNTY — Ozark Nat. Gas Co., C. E. Jones 1, 32-9n-32w, rig.

DALLAS COUNTY—Jno. James, Tr., Fordyce Lbr. Co. 1, 11-9s-15w, fsh 2527 ft.

HOT SPRINGS COUNTY—Starr Oil Co., Cunningham 1, 11-5s-16w, coring 1306 ft.

MILLER COUNTY—Fitzwater et al, E. L. Beck 1, sw se 33-15-26, dr red shale 2742 ft. W. E. Noel, Dickson 1, 11-20-27, dr 2275 ft.

OUACHITA COUNTY—Copenhaver et al, Berg 1, 13-15-17, cemtd 6-inch cas 2141 ft, td 2188 ft.

UNION COUNTY — Southern Prod. Co., Wingfield 1, 16-19-15, sd in water sand 3572 ft. Lion O. R. Co. et al, Hayes A-9, se se 4-16-15, sd while back off ds, td 7255 ft. Hill et al, Barnes 1, ne ne 21-19-15, lcn abn, will not drill. Pigeon Hill Oil Co., Union Sawmill 1, nw sw 19-17-12, sd laying water line 103 ft.

WASHINGTON COUNTY—Chase & Rogers, Cunningham 1, sw ne 14-15n-32w, lcn.

EASTERN STATES

Eastern States Field Developments

Completions

PENNSYLVANIA

Company, Well and Location	Initial Production Bbls.	Depth
BRADFORD FIELD—		
Bradford Producing, Inc., Fee 10..	62	....
Artley 5 .....pressure		....
Healey Petroleum Corp., DeGolia 13	10	....
Sloan & Zook Oil Co., Duke 1....	4	....
Sloan-Zook Producers Co., Fee 19..	17	....
Sloan-Zook Petroleum Co., Millett 1 .....pressure		....
Forest Oil Corp., Fee 93.....	2	....
Minard Run Oil Co., Cram 13..pressure		....
T. P. Thompson, Jr., Borden 20....	2	....
Andrus & McDowell, Bingham 269, tr. 135	3	....
Dallas Oil Co., Dallas 7 .....pressure		....
South Penn Oil Co., Burdick 7 .....pressure		....
W. E. Burdick, Milhaupt 9	3	....
Lane & Co., Bingham 371, tr. 1....	2	....
CLARION-VENANGO FIELDS—		
Alum Rock Gas Co., Kenemuth 4..	2	....
J. M. West, Jr., West 12.....	2	....
Mose Karien, Watson 6	2	....
CENTER-MIDDLE FIELD—		
C. A. Duke & Co., Scio 3	3	....
TIOGA-WAYNE FIELD—		
Schellheimer & Co., Mittendorf 1..	*	....
Allegany Gas Co. ,Thomas 1	¶20	4124

NEW YORK

ALLEGANY COUNTY—		
N. V. V. Franchot, Herrick-Shaner 9	7	....
Pure Penn Oil, Inc., Kinley 5	2	....
Miller Bros., Fee 20	2	....
A. F. Blanchard, Blanchard 6	2	....

WEST VIRGINIA

BOONE COUNTY—		
Pure Oil Co., Federal Coal Tr. 56	¶1	2249
GILMER COUNTY—		
South Penn Oil Co., Weaver 4	2	....
LOGAN COUNTY—		
Cumberland Petroleum Co., Merrill Coal 5	½	1247
RITCHIE COUNTY—		
H. H. Allen, J. P. Allen 1	¶¼	1950

CENTRAL OHIO

ATHENS COUNTY—		
Clyde Cody, Ackley 4	*	....
COSHOCTON COUNTY—		
Millersberg Gas Light & Coke Co., Lower 1	¶¼	823
Whittmer-Clay Co., Rine 1	*	2965
GUERNSEY COUNTY—		
Jewell Oil Co., Scott 1	1	1336
MEDINA COUNTY—		
Oko Oil & Gas Co., Essig 54.....	10	393
MUSKINGUM COUNTY—		
The Atha Co., Morrison 1	20	3065
MEIGS COUNTY—		
A. H. Bengek, Jones 3	¶¼	1582
Ohio Fuel Gas Co., Clover & Co. 1	¶¼	2015
SUMMITT COUNTY—		
Barnhart & Co., Osborn 1	½	3445
STARK COUNTY—		
Ohio Fuel Gas Co., Pry 1 .....¶3¼		4375
F. A. Brendall & Co., Lake Cable Co. 7 .....¶4¼		4402
Yearkey 2 .....¶1½		4286

NORTHWESTERN OHIO

SENECA COUNTY—		
M. P. McPheron & Co., Fox 1....	500	1457

INDIANA

FRANKLIN COUNTY—		
American Industrial Gas Corp., Beneker 1	*	2221
HANCOCK COUNTY—		
Knightstown Natural Gas Co., Ramsey 2	*	....
JOHNSON COUNTY—		
Unknown parties, Vandivier 1	¶¼	....
PIKE COUNTY—		
P. C. Andrews, Loveless 11.....	55	1354
PERRY COUNTY—		
Bolyard & Co., Taylor 1	*	....
RUSH COUNTY—		
Stout Bros., Unknown 1	¼	....
SULLIVAN COUNTY—		
William H. Wood, Thompson 1 ...	¶¼	....
SPENCER COUNTY—		
Daugherty & Co., Phillips Hrs. 1..	*	959

ILLINOIS

ST. CLAIR COUNTY—		
Johnson Oil Co., Smiley 1	*	850

KENTUCKY

GRAYSON COUNTY—		
Dewees & Co., Wheeler 1	*	....
HANCOCK COUNTY—		
Sand Petroleum, Inc., Williamson 1..	¶½	....
HART COUNTY—		
Gardenhire & Beville, Wilson 1....	*	....
L. C. Young, Shaw 2	50	....
L. C. Young, Perkins 2	240	....
River Oil & H. Z. Clark, Handy 3..	75	....
Carpenter & Frost, Payton 3	100	....
Anchor Oil & Gas Co., A. Payton 2..	195	....
H. Z. Clark & Co., Whitlow 9	200	....
Rivers Oil Co. & Thos. Wittmer, W. E. Payton 13	25	....
Carpenter & Frost, Garvin 1.....	¶1	....
Mud Branch Oil & Gas Co., Seymour 2	35	....
MUHLENBERG COUNTY—		
The Ohio Oil Co., Dukes 1	*	1900
OHIO COUNTY—		
D. J. White & Co., Lafe Payne 3..	10	....

MICHIGAN

MIDLAND COUNTY—		
W. L. McClanahan, Root 1	400	3553
Corning Estate 1	*	3588
The Pure Oil Co., Mullett 2 3500		3567
Reed 1 3000		....

Shelby County Well Shut Down After Pumping Test

Marshall, Texas.—Fuller and O'Brien Brothers last week abandoned Frost-Johnson 1, Aaron Castleberry Survey, Shelby County, a wildcat, as a dry hole at 2324 feet. This test logged Pecan Gap from 1486 to 2086 feet. It was a mile southeast of Oil News Publishing Company's Pickering 1, G. H. Patterson Survey, in the same county, which had a good oil and gas show in the top of the chalk at the 1500-foot level, but pumped fluid when standardized, at various amounts, estimated at 175 to 500 barrels daily, 90 to 95 per cent salt water. The latter test is now shut in waiting orders at 1573 feet.

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SOUTHEASTERN STATES

Florida Tests Interesting
Resume on Tennessee Test
Mississippi Leases Renewed

Southwest Tennessee Tests Resume Drilling Operations

Jackson, Mississippi. — After being shut down for several weeks Gilmore and Associates have resumed drilling in Scott 1, a wildcat in Chester County, southwest Tennessee, and on April 26 were drilling Selma clay at 865 feet. Twelve hundred feet of eight-inch casing is on the location and the casing is being run as operations proceed with cable tools. Ten-inch casing had been cemented at 552 feet.

Chester County Oil & Gas Company is negotiating for resumption of drilling at 2510 feet in Montgomery 1, a wildcat in Decatur County, Tennessee. Original contract depth was 2500 feet. This test was spudded in 1928.

Set First Sasing in 3500-Foot Alabama Wildcat

Jackson, Alabama.—Tidal Oil Company, Danciger Oil & Refining Company, and Ramsey Petroleum Company, have cemented 12½-inch casing at 337 feet in Everett and Boykin 1, ne se Section 33-6n-2e, Clarke County, Alabama, on the Hatchetigbee Anticline; elevation is 65 feet. A 3500-foot hole is planned.

Four miles southwest of the crest of the Hatchetigbee, South Alabama Oil & Gas Company's St. Stephens A-1, is given the following check location: 156 feet south and 304 feet east northwest corner Lot D, Section 26-7n-1w, Washington County; elevation is 187.2 feet. Derrick is up and rig is being moved in.

In Lamar County, Alabama, P. J. McAlpine and Associates' Gardner 1, NW NW Section 22-15s-16w, was drilling shale on April 26 at 698 feet. This test is said to be checking closer with several small shallow gas wells drilled a number of years ago in Fayette County, Alabama, than did the gassers in the Amory gas field of Monroe County, Mississippi.

Big Operators Renewing East Mississippi Leases

Meridian, Miss. — That several of the major companies plan future exploration of the oil and gas possibilities of east central Mississippi in Clarke, Wayne and surrounding counties, is indicated by the fact that several companies are paying their rentals on these blocks. Humble Oil & Refining Company and Pure Oil Company have recently paid their rentals. Gulf Refining Company whose Long-Bell Lumber Company A-1, SW SW Section 10-2n-16e, Clarke County, had a saturated oil sand carrying a heavy oil in the Eutaw at 3692-3700 feet, is reported rendering its leases for taxes in Clarke County. This company drilled two tests to the 4500-foot level in this area.

In line with similar transfers on its large tracts in west Alabama and east central Mississippi, Long-Bell Lumber Company recently transferred to Long-Bell Minerals Corporation, the mineral rights on several thousand acres in Wayne County.

It is reported that parts of the blocks of approximately 500,000 acres in southeast Mississippi and southwest Alabama assembled by Alfred S. Black, are going by default for 25 cents per acre rentals now due on some of the acreage.

Florida Field Work Includes Interesting Tests

Houston.—Field activity in Florida includes various interesting tests. Information on them is included in the following report as furnished by a subscriber to THE OIL WEEKLY.

East Coast Oil & Natural Gas Company's test in Dade County, south of Miami, is down to 5400 feet, trying to make a shut-off with 6⅝-inch casing at 5000 feet. Bottom of the hole is in Dolomitic limestone and anhydrite, still in the Eocene.

The Miami-Florida Oil Company well in Dade County on the Tamiami Trail, is experiencing serious mechanical difficulties due to a fishing job which is now ahead. It is now standard equipped, as the rotary equipment there was replaced a year ago. Operations are at a standstill, the bottom of the hole being at 4560 feet in broken lime anhydrite and gypsum but still in the Eocene.

Pioneer Oil & Mining Company's test in Pinellas County is shut down.

Oil City Corporation's No. 1 test in Walton County is down to 4670 feet in blue-black shale of the Eutaw formation. It is rotary equipped and has 6⅝-inch casing cemented at 4150 feet.

Calumet Company's No. 1 test in Walton County, of which project Francis S. Whitten, Edward A. Hill, and William G. Blanchard are owners, is at a standstill awaiting delivery of certain leases. Operations have proceeded to delivery of derrick pattern on location.

On of the most interesting and important developments in the state is the test at Cedar Keys, Levy County, located in NW SE Section 9-15s-13e. The Calumet Company has obtained control of the well and hereafter it will be known as Blanchard & Hill's Cedar- Keys Company 1. It has encountered a heavy gas in what is thought to be the Woodbine. Its depth is 4010 feet. Unable to shut off water with standard equipment, rotary is being assembled, and it is planned to make a drill stem test of the gas within the next few weeks. The gas, encountered in an unconsolidated sand, has worked itself up through the 4000 feet of water and been burned at the casing head; and it has been reported upon by the Florida state geologist as a wet petroleum gas.

Southeastern States

MISSISSIPPI

New Operations

RANKIN COUNTY—
Owen & Weaver, Fitzhugh 1, 1740 ft e and 225 ft n swc 1-5n-1e, rig.

Wildcat Drilling Report

(Wells shut down not included)

CLARKE COUNTY (Quitman) — F. X. Gowans, Elfring 1, se ne 13-1n-14e, dk.

HINDS COUNTY (Edwards Dist.)—Miss. Minn. Oil Co., Edwards Land Co. 1, sw ne 23-6n-4w, dr gumbo 2600 ft.

LAMAR COUNTY (Purvis Dist.)—Stauffer & Kouri, Trs., Bond 1, se ne 18-2n-14w, setting 10-inch 1050 ft, td 1090 ft.

LOWNDES COUNTY — Lowndes County O&G Co., Carr Est. 1, ne nw 34-17-16e, rig.

RANKIN COUNTY — Majestic O&G Co., Elton Lbr. Co. 1, 10-4n-3e, dk.

SCOTT COUNTY—Culley et al, Owen 1, se ne 2-8n-9e, sd 20 ft.

SHARKEY COUNTY (Nitta Yuma)—United Gas Pub. Serv. Co., Lenhart 1, 14-14n-6w, dr sandy Midway shale, 3620 ft.

ALABAMA

CLARKE COUNTY—Tidal Oil Co., et al, Everett & Boykin 1, ne se 33-6n-2e, elev 65 ft, cemtd 10-inch cas 340 ft.

LAMAR COUNTY—P. J. McAlpine et al, Gardner 1, nw nw 22-15s-16w, elev 503 ft, dr shale 698 ft.

WASHINGTON COUNTY — South Ala. O&G Co., St. Stephens A-1, 156 s and 304 ft e nwc Lot D, 26-7n-1w, (corrected lcn), elev 187.2 ft, dk and move in rig.

TENNESSEE

CHESTER COUNTY—Gilmore et al, Scott 1, dr Selma clay 865 ft.

FLORIDA

PINELLAS COUNTY—Pioneer Oil & Mining Co., Yerxa et al 1, 2-29s-16e, dr 1325 ft.

WALTON COUNTY—Calumet Co., Walton L&T Co. 1, se ne 7-1n-17w, dk pat. Oil City Corp., Walton L&T Co. 1, ne nw 12-1n-19w, dr hd black shale 4620 ft.

New Equipment for the Field

MACHINERY - TOOLS CATALOGS - BOOKS

▼ ▼ ▼

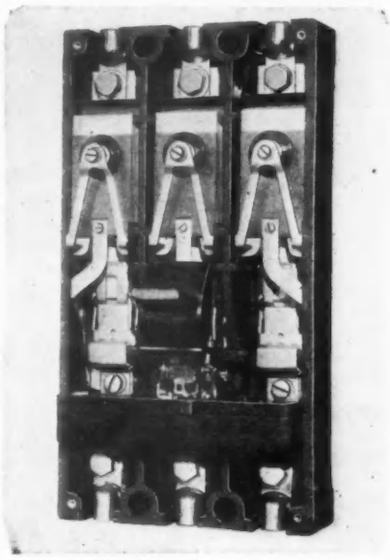
1. Circuit Breaker

WESTINGHOUSE ELECTRIC & MANUFACTURING CO.

Westinghouse Electric & Manufacturing Company, East Pittsburgh, has an interesting development in the new AB "De-ion" circuit breaker, for which a number of advantages are claimed. It has nothing to be renewed or replaced, and can be reclosed by anyone as quickly and easily as a switch.

The "De-ion" breaker is said to require only about 70 per cent as much mounting space as a carbon breaker. Unlike the latter, it opens a short circuit without flash or undue noise.

The "De-ion" breaker is so enclosed in a molded composition box that no live parts are exposed. A handle, like that of a switch, protrudes through the cover to provide means for manual operation and for reclosing the breaker after it has been tripped, but the remainder of the mechanism is entirely enclosed.



De-ion Circuit Breaker

The operating mechanism is arranged to provide quick make and quick break. The contacts, which are trip free of the handle, are held in the closed position by a toggle composed of two sets of links, one of which is fulcrumed to the contact mechanism, and the other on a cradle beam pivoted on the frame at one end and latched to the trip mechanism on the other end. The trip mechanism consists of a bi-metal thermal unit calibrated to trip at 125 per cent overload. On breakers of 50 amperes or more an additional trip of the magnetic type trips the breaker instantly on short circuits.

Upon being released by the trip mechanism, the cradle beam moves, permitting the toggle linkage to break and the contacts to open at high speed.

When the contacts open the arc is drawn through a series of small parallel plates one-sixteenth of an inch apart. Between the plates a radial magnetic field is created by a nearby coil. The arc creates another magnetic field which moves the arc into the radial field. The plates absorb so many free ions that the arc is destroyed.

The 15 to 50-ampere breakers will be available in one, two and three pole combinations, 125 and 250 volts. The 55 to 600 ampere breakers will be available in two and three pole combinations up to 575 volts.

The use of "De-ion" breakers reduces the size of switchboards. A 600-ampere "De-ion" breaker occupies a space 8¼-inch wide, while a 600-ampere carbon breaker requires a space 22-inches wide.

2. Gas Odorizers

PACIFIC PIPE & SUPPLY COMPANY

Pacific Pipe & Supply Company, 104 Santa Fe Avenue, Los Angeles, announces complete reconstruction and simplification of Papico odorizers to effect standardization of the units and adaptability to all requirements of natural gas companies.

The new units are to be known as types AH, BH, V15 and VS. The AH has a capacity of 300,000 cubic feet per day, BH—1,500,000 cubic feet, and V15—over 1,500,000 cubic feet. The two smaller units are of the horizontal type, while the V15 is of a vertical unit construction. Each of the units has capacity for one week's supply of odorant when operated at maximum. All three types are for working pressures to a maximum of 150 pounds with safety factor of five, but type VS can be constructed for any pressure if desired.

Complete standardization of the new units is a feature of interest to gas companies. The units by reason of their economy in manufacture, discourage gas companies in resorting to makeshift devices of questionable efficiency.

Automatic proportionality of the odorant is provided by an improved calibration chamber and liquid orifice housing and the larger size is particularly accurate in impregnating the gas in relation to the flow through the line.

If the gas flow stops, injection of the liquid odorant stops automatically. When the gas flow resumes, the liquid in-

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jection is automatically picked up. The design of the mechansim prevents syphoning or over-feeding of odorant. A special pressure float maintains a constant liquid level for the feed through the orifice. The liquid is shut off when the gas stops, so no hydrostatic head is on the orifice.

All specifications meet A. S. M. E. code.

With several sizes to choose from, an installation can now be made commensurate with the amount of gas handled, to meet definite flow conditions. Types AH and BH can be erected directly upon the gas line to save room in a crowded location. Type V15 is mounted on a cement foundation.

3. Borium Shapes

THE STOODY COMPANY

The Stoody Company, Whittier, California, announces the addition of Borium shapes to its line of diamond substitutes, with the statement that the shapes are for use in maintaining uniformity in thickness of cutting edges.

Experimental tests covering several months have been run on this new substitute material, including placing samples one eighth-inch thick on fire brick for heat tests against melting, breaking or cracking. Small bits were made up, mounted with Borium shapes and operated in a drill press, cutting through cement slabs, and cutting steel on a turning lathe.

Shape Borium is now being sold in flat, half round, quarter round, or other shapes to suit the particular purpose, and in any lengths from one quarter-inch up to two inches regular, or longer for special jobs.

4. Push Button

LINCOLN ELECTRIC COMPANY

Lincoln Electric Company, Cleveland, Ohio, announces a number of improvements in the safety push button introduced to the trade early last year.

A feature of this push button switch is that the start button is inside of the stop button, as shown in the accompanying photograph. The stop button can be operated from any angle by merely striking the front of the control box with the flat of the hand, but the start button must be operated with the finger. With the new push button, the stop button can be locked in the off position by pushing it in and twisting it to the right. Heavy springs prevent accidental operation of either button when not locked.

It is claimed the button will handle the heaviest control circuits up to 600 volts A.C. or D.C. because the contact opening is larger than usual. This is because the contacts use extra heavy double break solid copper contacts which have a positive wiping action. Contacts are enclosed in a dustproof, cold moulded asbestos case.

The button is self-contained and need not be taken apart or even removed from the box cover for wiring. All of the terminals are clearly marked and brought out of the case to the back where they are easily accessible. The new safety switch is known as type A-31.

Lincoln Push Button

5. Cubicle Starter for Synchronous Motors

ELECTRIC MACHINERY MANUFACTURING COMPANY

Electric Machinery Manufacturing Company, Minneapolis, Minnesota, announces a new cubicle type automatic starter for synchronous motors, for use particularly where the starter is placed out in the room with the motor or where open type starters are undesirable due to atmospheric conditions.

This type of cubic starter uses a front compartment for the meters, control relays, rheostat and field contactor; rear compartment for oil-break line switches; and upper compartment for the disconnects.

This starter is especially designed to permit easy access to all working parts.

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NEWS *from the Industry's* EQUIPMENT MAKERS

Keeping in touch with developments with Manufacturers and Supply Dealers

Cruiser "Petrel" of Los Angeles, off for Lower California. John Grant, owner, is waving his good bye.

John Grant Entertains At Being a Sailor

Los Angeles.—John Grant, owner of Grant Oil Tool Company, Los Angeles, accompanied by his brother, W. D. Grant; W. R. Martin, president Martin Decker Corporation, Long Beach, and A. J. Campbell, sailed from Long Beach Harbor April 14 for a month of fishing and hunting on the coast of Lower California. Mr. Grant one week prior to sailing purchased the cruiser "Petrel" of Los Angeles, a very sturdy vessel, powered with a Diesel engine, and rigged for sails. The party expects to be absent for four weeks. Grant says he will sell Frosty Martin several underreamers on the trip, and Frosty is to retaliate by selling John several weight indicators. They plan to turn back at Point San Luis.

JOHN GRANT
. . . in his sailing togs

Thrift Corporation Moves Headquarters

The Thrift Corporation announces removal of its headquarter office and warehouses from the Merchants & Manufacturers Building in Houston to 2418 Winter Street, where stocks of the Thrift hydraulic casing pulling machine, with parts, will be carried as well as stocks of the Hamer Oil Tool line which is distributed by the Thrift organization.

Cooper-Bessemer Promotes Hudgins to Sales Manager

After nine years service in the sales and engineering departments of C. & G. Cooper and more recently in the Cooper-Bessemer Corporation, T. F. Hudgins has been promoted to the position of general sales manager with headquarters at Mt. Vernon, Ohio. Mr. Hudgins has been vice president and western sales manager with offices in Tulsa.

Succeeding to the position vacated by the death of Mr. Thomas in March of this year, Mr. Hudgins will have supervision over all sales of the company throughout the country.

Entering the oil and gas industry in 1916 after leaving the staff of Perdue University, Mr. Hudgins was associated with the Columbia Gas & Electric Company and after service in the army in 1917 and '18 he returned to the United States in 1919 and took up his work with Columbia Gas and United Fuel Gas. In 1919 he accepted a position with National Supply Companies and shortly thereafter came to the Mid-Continent field.

Again going abroad in 1921 to assist in opening a London office for National Supply Companies, Mr. Hudgins remained in England about a year and on his return to the United States continued with that organization until 1923 when he joined the C. & G. Cooper Company and opened offices in Tulsa with supervision over the Mid-Continent area. When C. & G. Cooper Company and Bessemer Gas Engine Company merged Mr. Hudgins was made a vice president and a director with title of western sales manager in charge of all territory west of the Mississippi River. He was appointed to his new position in March.

T. F. HUDGINS

Squeaks *from the* BULL WHEEL

Last week on this page we had this:

The Problem

A train is operated by three men, Smith, Robinson and Jones. They are fireman, engineer and brakeman, but not respectively. On the train are three passengers of the same names, a Mr. Smith, Mr. Robinson and Mr. Jones. Consider the following data about all concerned and then answer the question: Who is the engineer?

1. Mr. Robinson lives in Detroit.
2. The brakeman lives half way between Chicago and Detroit.
3. Mr. Jones earns exactly $2000 a year.
4. Smith beat the fireman at billiards.
5. The brakeman's nearest neighbor, one of the passengers, earns exactly three times as much as the brakeman, who earns $1000 annually.
6. The passenger whose name is the same as the brakeman lives in Chicago.

Go to it!

Here Is the Solution:

The brakeman's nearest neighbor, one of the passengers, earns $3000.00 a year (see par. 5) so he can not be Mr. Jones who earns exactly $2000.00 a year (see par. 3) or Mr. Robinson who lives in Detroit (see par. 1) thus making it impossible for him to be the brakeman's nearest neighbor since the brakeman lives half way between Chicago and Detroit (see par. 2) therefore MR. SMITH must be the brakeman's nearest neighbor.

If Mr. Smith is the brakeman's nearest neighbor and the brakeman lives half way between Chicago and Detroit (see par. 2) and Mr. Robinson lives in Detroit (see par. 1) then the passenger who lives in Chicago and whose name is the same as the brakeman (see par. 6) must be MR. JONES.

If Jones is the brakeman and Smith beat the fireman at billiards (see par. 4) then SMITH must be the Engineer.

Now get back to work.

Sheriff—Madame, I regret to tell you that I've got to attach your Rolls-Royce and your Cadillac.

Mrs. Swelle—Oh, don't go puttin' on the writs.

Football Player (after a fashion):—"Yes, it's my ambition to be a judge some day."

She—"You are fortunate. Your experience on the bench will be very useful then."

"Isn't this an ideal place for a picnic?"

"Yes! Fifty million insects couldn't be wrong."

Midnight was striking as the householder crept down the stairs. His eyes fell on a burglar tampering with the safe. "Jove, a real burglar!" he smiled. "Wait a minute, will you?"

"While you call a cop, eh?" said the burglar. "Not me!"

"No," said the householder, "wait until I call my wife. She's heard you every night for 15 years, and it'll be a real pleasure to her to see you at last."

Young Harold was late for Sunday school, and the minister inquired the cause. "I was going fishing, but father wouldn't let me," announced the lad.

"That's the right kind of a father to have," replied the reverend gentleman. "Did he explain the reason why he would not let you go?"

"Yes, sir. He said there wasn't bait enough for two."

"My wife comes home from the office too tired for words."

"Gosh! Do you suppose my wife could get a job in that office?"

Flapper: "Don't you speak to him any more?"

Ditto: "No! Whenever I pass him I give him the geological survey."

"Geological survey?"

"Yes, that's what is commonly known as the stony stare."

A colored porter in a hotel was asked why rich men usually gave small tips, while poor men were liberal.

"Well, suh, boss I don't know, 'cept the rich man don't want nobody t' know he's rich, and the po' man don't want nobody t' know he's po'."

Mother: "I don't think the man upstairs likes Johnnie to play on his drum."

Father: "Why?"

Mother: "Well, this afternoon he gave Johnnie a knife and asked him if he knew what was inside the drum."

Once a caddy asked permission of his employer to take a young friend of his with them over the course. The golfer gave his permission—but he was sorry a little later that he had done so, when he made a perfectly terrible mess of a stroke, and the caddy turned to the other "kid" with:

"There, Bobby, ain't you glad you came with us instead of goin' to the circus?"

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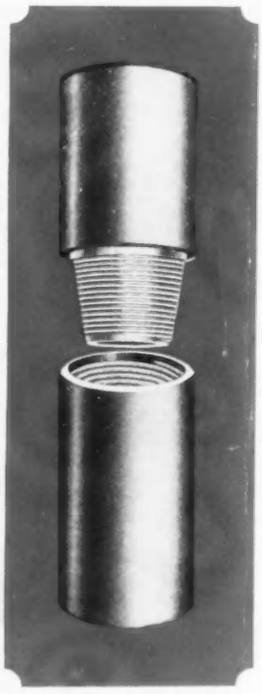

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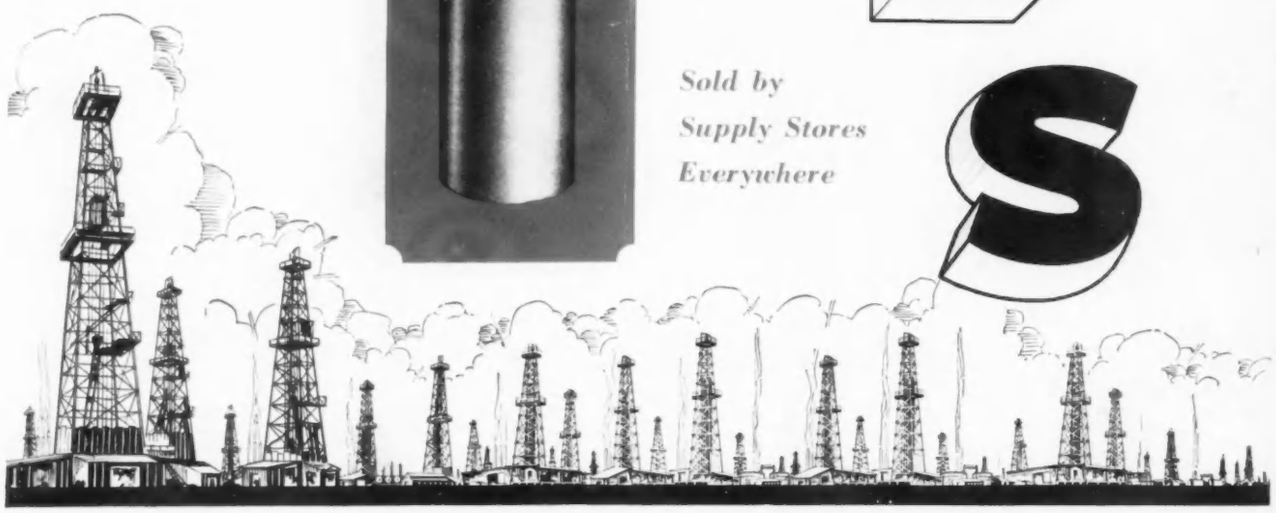

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